

## TYPE SPECIMENS OF LEPIDOPTERA IN THE TEPPER COLLECTION AT MICHIGAN STATE UNIVERSITY

JOHN H. WILTERDING

Department of Entomology, Michigan State University, East Lansing, MI 48824

*Abstract.*—Holdings of Lepidoptera type material in the Tepper collection at Michigan State University are completely evaluated and annotated. Acquired in 1889, the collection contains types of 180 nominate Lepidoptera, predominately noctuids described by H. K. Morrison. A brief curatorial history of the collection as well as handwriting examples for authors of the type material in the collection is presented. The types are completely annotated with bibliographic citation, type locality, condition, and a complete discussion of the status of each type. The following Morrison lectotypes are also designated: *Tarache crustaria*, *Agrotis decolor*, *Calocampa germana*, *Hadena congermana*, *Agrotis acclivis*, *Segetia orbica*, *Tarache patula*, and *Eurois astricta*.

*Key words:* Lepidoptera, Types, Tepper, Cook, Morrison, Lectotypes.

---

For slightly over 100 years Michigan State University (MSU) has been the repository of the Tepper Collection of Lepidoptera. The collection of over 12,000 specimens (8,000 species) of butterflies and moths was purchased in 1889 from Fred Tepper of Brooklyn, New York. Included in this collection were a number of type specimens of mostly North American Macrolepidoptera; the majority being species described by Mr. H. K. Morrison.

Although biographical information on Tepper is lacking, we know that Tepper was an avid collector, was active in his interactions with specialists and was an early member of a nucleus of individuals who formed the Brooklyn Entomological Society (Franclemont, pers. comm. 1994). He also purchased the collection of H. K. Morrison, probably sometime in 1876, before Morrison's departure to California and the Washington Territory to collect Lepidoptera. The collection contains 180 types (or putative types), the vast majority of these described by H. K. Morrison. In addition, a lesser number of types of Edwards, Grote, Hulst, Smith and Tepper are found in this collection. The majority of the types are noctuids, but sesiids, geometrids, sphingids, notodontids, saturniids, and limacodids are also represented. Over the years, this collection has been an important resource for workers of North American Lepidoptera. It has also been the source of some of their frustrations; this project in part is an attempt to ameliorate the problem by presenting an accurate account of the types in the Tepper collection.

The collection was acquired by MSU in 1889, through the efforts of then professor of Entomology A. J. Cook. In the summer of 1888 Cook learned from "a noted professor in one of our Eastern colleges" (probably J. B. Smith of Rutgers) that the Tepper collection was for sale (Anonymous, 1889). Shortly after, Cook and then MSU President Willits approached the State Board of Agriculture with an appeal for the purchase the collection, for \$5,000. Senator James MacMillan, upon hearing of the request, wrote Cook stating "I have considered the matter of the Tepper Collec-

tion, and have decided to authorize you to make the purchase of this collection of insects" (Anonymous, 1889). Cook then traveled to New York to arrange for its shipment and the collection arrived at Michigan State on March 5, 1889.

I began this study on the request of Fred Stehr that I "quickly catalog" the Lepidoptera types that we had in the MSU collection to be placed in a separate part of the collection. It soon became clear that there were numerous curatorial mistakes and inconsistencies, many that were quite serious. These errors included the loss of the original combination associated with some specimens, loss of the specific epithets, non-type specimens mixed in with the type series, inaccurate dates, misspellings, etc. It was also believed that there might be types "hiding" in the general Lepidoptera collection that were not recognized as types. This project was undertaken because it was almost certain that if a lepidopterist did not soon attend to these errors, these problems would only worsen with time. It was clear that an accurate accounting of the type material in the Tepper collection was long overdue and that the holdings of types in the collection should be accurately communicated to the research community before knowledge of the location of a type, or type specimens, was lost. Moreover, potential changes in the Zoological Code of Nomenclature necessitate that future workers have the best opportunity to study all relevant type material, since the conclusion of the last principle reviser as to the application of names in synonymy will take precedence following publication (Terry Erwin, pers. comm. 1994).

#### EARLY CURATION

When the Tepper collection was received at MSU, Professor A. J. Cook made an effort to record all the species (and number of specimens) received in a notebook. The presence of this catalogue was brought to my attention by M. C. Nielsen, and is still in our possession. On the first page of these notes, on MSU Stationery of that period, is written "Catalogue of the MacMillan Collection of Lepidoptera made in 1889 from the collection as received from Mr. Tepper." These notes proved invaluable because they indicate which species in the collection were represented by types. It appears that based on this typed inventory of the Tepper collection, each type specimen was labeled, perhaps by Cook, with a unique yellow, rhomboidal label (Fig. 1). Apparently, no effort was made to add information to this material other than the addition of the yellow rhomboidal type label. Therefore, if a type was

→

Fig. 1. Example of the type label and handwriting of A. J. Cook, from the type of *Lithocodia penita* Morrison.

Fig. 2. Example of Frederick Tepper type label from the type of *Drynobia tortuosa* Tepper.

Fig. 3. Tepper locality label from type of *Oncocnemis riparia* Morrison.

Fig. 4. Handwriting and typical label shape of Morrison from the type of *Mamestra teligera* Morrison.

Fig. 5. Type label of *Agrotis personata* Morrison, atypical of Morrison's label design.

Fig. 6. Type label and handwriting example from the type of *Heliophila patricia* Grote.

Fig. 7. Type label and handwriting from the type of *Nemoria tepperaria* Hulst.

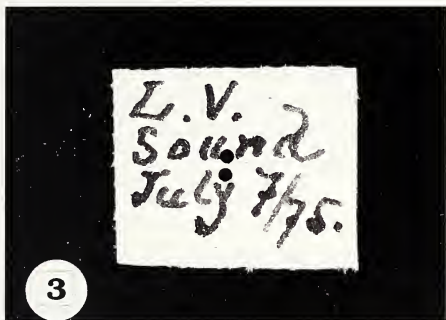
Fig. 8. Type label of *Mamestra dodgei* Morrison in an unknown hand, perhaps Dodge.



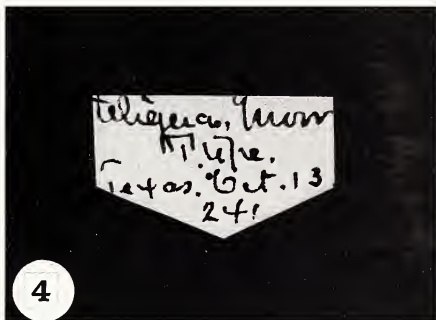
1



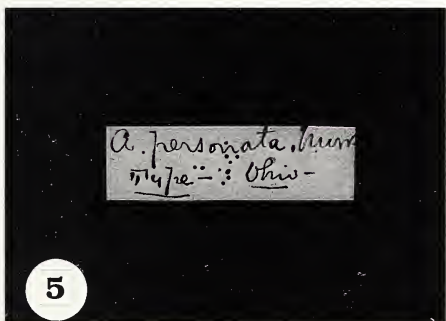
2



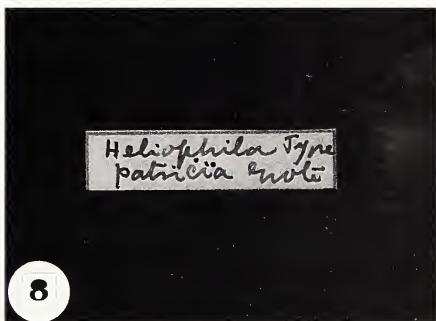
3



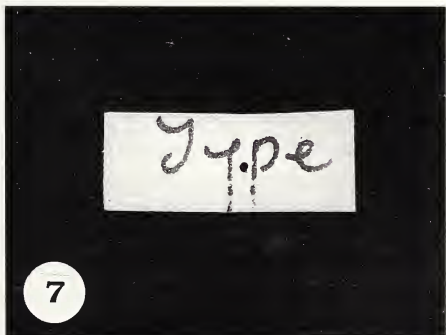
4



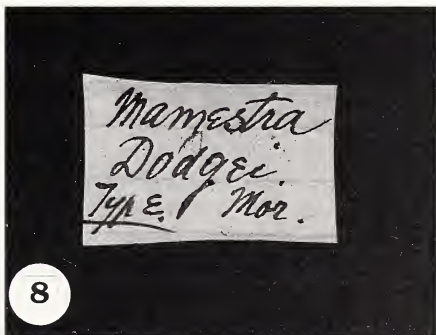
5



6



7



8

without a label indicating either the author or the specific epithet, it was to remain this way. While this situation may seem chaotic to us today, in the late 19th century, type concepts were in a state of flux, and curation of types, and placement data on specimens was far from standardized. Therefore, unless the authors did so themselves, the specimens often did not have the original name, or the word "type" associated with the specimen (Franclemont, pers. comm. 1994). In the case of the Tepper collection, this has resulted over the years in the inaccurate curation, and even worse, the "loss" of type material. In more than a few cases the recovery of "lost" types has been accomplished by a careful search of the general collection.

We know that initially the collection was housed separately from the main collection in "MacMillan Cabinets" (Anonymous, 1889). Some time later, this material was interpolated into the general collection as the collection began to expand. The types remained scattered throughout the general collection until the 1950's when "all" the types were pulled from the collection by Roland Fischer and housed separately. But only those specimens with the rhomboidal "type" label were removed; any material not so labeled, or with a hidden "type" label, was apparently overlooked. In an effort to recapture any potential "lost" types, I searched through the entire collection looking for types (mostly Morrison) which may have been overlooked in the past.

#### BACKGROUND AND TREATMENT OF THE TYPES

There are a number of features of the type collection worthy of careful explanation that were not fully appreciated by earlier workers of the material. In nearly all cases at least one specimen of an original type series bears the yellow rhomboidal "type" label (Fig. 1) that was erroneously interpreted by many as a Tepper "type" label (Todd, 1982). This label, however, is probably in Cook's, not Tepper's hand; examples of Tepper's handwriting can be seen in Figs. 2-3. Through careful study of the entire collection, it was discovered that this rhomboidal label was also associated with other non-lepidopterous type material described from the collection in the 19th century, and also matches the hand of the individual who wrote "type" in the original accession notes. It seems likely that this label was added *after* the collection was received at MSU, and was likely done so by Cook or other worker and appears to have been a general policy in the treatment of all types in the collection near the turn of the century.

Except in a few instances, regardless of the number of specimens in the type series, only one specimen in a type series is labeled "type" with this rhomboidal label. This has resulted in the inclusion or exclusion of additional specimens from the type series and has necessitated referring to the original descriptions in order to clearly define the limits of the original type series.

Morrison's types comprise the bulk of the Lepidoptera type collection. This is fortunate because Morrison usually adequately labeled the specimens with the specific name and "Morr." He usually employed a distinctively shaped label (Fig. 4), that he rarely deviated from (Fig. 5) and which frequently included the location and date of capture. In all but a few cases, only one specimen in an otherwise syntypic series has this detailed label. Other specimens in a type series often lack data labels of any kind, or more frequently, only the state or territory of capture. Based on



Morrison's type labeling protocol, there is some evidence that suggests that Morrison had an operational holotype concept at this time, in part due to his practice of selecting only one specimen for this detailed label. His specimens reflect this well, for where there is more than one in a type series, only a single specimen is labeled with the word "type" on his peculiar label.

Other authors have described species from material in the Tepper collection, and more often these were originally described from Morrison's collection before it was purchased by Tepper. Smith described a number of noctuids from the Tepper collection, some of which Todd (1982) recognized as valid types in his work on the Smith type material. Unfortunately, he seems to have missed a number of types and historical specimens with notes written by Smith which were still "hidden" in the general collection. I have not endeavored to recapture type material that Todd overlooked since lectotypes and type identities were fixed for all Smith names in Todd's work. Todd (1982) designated a number of Tepper types as lectotypes, but in only one case was a lectotype label affixed to the specimen; lectotype labels have since been added to the proper specimens based upon Todd's publication. In addition, types of Grote (Fig. 6), Tepper (Figs. 2,3), and Hulst (Fig. 7), can be found in the type collection. In addition, there are several data labels whose authorship I have been unable to trace (Fig. 8).

There were a number of sources used to assist in the recovery of additional type material and to confirm the present location of many types. Smith (1893), in his *Catalog of Lepidoptera*, discussed the location of the type, and whether he had examined it or not. Taxa which he explicitly mentioned having seen in the Tepper collection, were cross-referenced with the type, and general collections. The general collection has also been checked against all (or most) of the Morrison names resulting in the discovery of 28 unlabeled types (some putative types). Many of these types were previously believed lost. Poole's (1989) catalog of the Noctuidae was also used for clues as to the location of type material, recognizing Poole's assertion that he often was not certain of the location of types, but was making educated guesses.

I have attempted to be as accurate as I can when making decisions as to the number of types in the original series and the validity of "type" material. It was not uncommon during this period for a new species to be described from a number of specimens from private collections. Usually these specimens were returned to the private collector; and therefore types for a single name may presently be found in a number of collections. Therefore, for example, it is not uncommon to expect material to be both at MSU, and the AMNH. These non-MSU specimens were not tracked at other institutions, but published lists and access to Internet data bases were used to check type holdings at other museums.

On several occasions lectotypes are designated, and the rationale for doing so is stated in the species accounts; I have endeavored to do so only when there are no closely related species and when it is reasonably certain that there is not additional type material at other institutions. In addition, lectotypes are not designated in taxonomically difficult genera or species groups. At no time in the work do I make nomenclatorial decisions, or take such action as removing specimens from the type series when clear evidence was not found to support such action. My primary goal

in this work is to communicate exactly what is in the collection so that future workers might be better informed when studying this collection.

The types are listed alphabetically by species name within each family. For each type(s) the original combination, citation, and a quote from the description as to the type locality and, when stated, the source (collector) of the specimen is given. Also included is a list of specimens noting the sex and the data from each label listed in order (separated by “”) from highest to lowest label on the pin with notes or questionable letters in brackets []. After each label the author’s handwriting is indicated in brackets []: (M = Morrison, T = Tepper, H = Hulst, C = Cook (yellow rhomboidal label), G = Grote, ty = type print, S = Smith). Horn and Kahle (1935–1937) was used to confirm the handwriting identity, however, this was not possible in the case of Tepper, Cook, or Morrison. The condition of the specimen is given following label information. For each species I give relevant remarks pertaining to the material, my conclusion as to the validity of the type material, the present combination and the Hodges (1983) number (RWH). In some instances there was non-type material mixed with the type(s); these specimens have been removed, and no indication of doing so is made when such action was not ambiguous. I have referred to, whenever possible, publications by the last principle reviser to cross check conclusions that they may have reached regarding the location of type material.

The material is available for study by qualified specialists, and we encourage the use of this valuable type collection in future revisionary projects. Workers should be aware that most of the Tepper material is still extant, in the general collection. I have gone through much of the collection trying to recover the Morrison types, however, the larger task of cross-checking all the Grote names with their original descriptions, and the possibility of overlooked Morrison and Hulst types remains a possibility. It is likely that not all of the types have been retrieved from the general collection. Suggestions as to other types that we should search for are welcome.

## Sesiidae

*Aegeria albicornis* Hy. Edwards, 1881b:201.

Type locality. “1 male. Nevada. (Morrison). Type. Coll. F. Tepper.”

Male, “Nevada”[T]; “Type”[C]; “Female”[symbol] [In good condition]

Remarks: The holotype (Englehardt, 1946). *Synanthedon* (RWH 2570).

*Aegeria brunneipennis* Hy. Edwards, 1881b:191.

Type locality. “1 female. Georgia. (Morrison). Type. Coll. F. Tepper.”

Female, “Ga”; “F. T.”[T]; “Type”; “Female”[symbol] [Type in poor condition; the abdomen and legs missing, the left antenna is broken near middle]

Remarks: The holotype. Englehardt (1946) gives no indication as to the location of the type. Eichlin and Duckworth (1988) give MSU as the respiratory. A synonym of *Synanthedon rileyana* (Hy. Edw.) (RWH 2552).

*Sciapteron graefi* Hy. Edwards, 1881b:183.

Type locality. “1 male. 2 females. Nevada (Morrison.)” “Type. Coll. E. L. Graef  
...”

Female, “Nevada”[T]; “F. T.”[T] “Type”[C]; “Female” [In good condition]

Female, “Nevada”[T]; “F. T.”[T]; “Type”[C]; “Female” [In good condition]

Remarks: Syntypes. Englehardt (1946) and Eichlin and Duckworth (1988) both state that the U.S.N.M. has the type. However, it is likely that the two females at MSU are also types and were obtained by Tepper through his purchase of the Morrison collection. A synonym of *Synanthedon exitosa* (Say) (RWH 2583).

*Pyrrhotaenia helianthi* Hy. Edwards, 1881b:203.

Type locality. "1 Male, 1 female. Virginia City, Nevada. (H. E.) On *Helianthus*, sp. Types. Coll. Hy. Edwards."

Female, "Nevada"[T]; "F. T."[T]; "Female" [Specimen in very good condition]

Remarks: Englehardt (1946) states that the type is in the AMNH. Eichlin and Duckworth (1988) state the type is at MSU. This is probably the holotype. A synonym of *Synanthedon polygona* (Hy. Edw. 1881) (RWH 2581).

*Aegeria inusitata* Hy. Edwards, 1881b:201–202.

Type locality. "White Mts. N. H. (Morrison.) Andover, Mass. (F. G. Sanborn.)" "Types. Coll. F. Tepper."

Female, "W. Mts. N. H."[M]; "Type"[C]; "female"[symbol] [In very good condition]

Male, "W. Mts. N. H."[M] "86"[?] "male"[symbol] [In very good condition]

Remarks: Undoubtedly part of the original syntype series. Engelhardt (1946) makes no reference to the location of the type(s) of this name. Eichlin and Duckworth (1988) make reference only to the Andover specimen which is in the AMNH. They make no reference to the location of the NH specimen(s). A synonym of *Synanthedon pictipes* (G.&R.) (RWH 2550).

*Carmenta minuta* Hy. Edwards, 1881b:185.

Type locality. "1 male. Georgia. (Morrison.) Type. Coll. F. Tepper."

Male, "Georgia"[T]; "Type"[C]; "*minuta* Hy Ed"[M]; "female."[symbol] [In poor condition, the abdomen and right forewing missing]

Remarks: The holotype (Eichlin and Duckworth 1988). A synonym of *Osminia ruficornis* (Hy. Edw.) (RWH 2545).

*Albuna montana* Hy. Edwards, 1881b:188.

Type locality. "21 examples." "White Mountains, N. H. (Morrison. Grote.) Nevada, Colorado. (Morrison.) Anticosti Isld. (Couper.) Ser. Nevada, Cal. (H. E.). Colls. Tepper, Graef, Neumoegen, W. Grey, Dr. Bailey, Hy. Edwards, etc., etc."

Female, "W. Mts. N. H."[T]; "F. T."[T]; "Type"[C]; "female"[symbol] [In good condition, the meso legs missing]

Male, "W. Mts. N. H."[T]; "F. T."[T]; "male"[symbol] [In good condition, the right meso and meta leg missing]

Male, "W. Mts. N. H."[T]; "F. T."[T]; "male"[symbol] [In good condition]

Male, "Anticosti"[T]; "F. T."[T]; "male"[symbol] [In poor condition, antennae missing, meso legs missing, considerable development of verdigris]

Female, "W. Mts. N. H."[T]; "F. T."[T]; "female"[symbol] [Damage by dermestids to the abdomen, and antennae broken near base]

Male, "Mt. Hood"[T]; "male"[symbol] [In fair condition, the left meso leg missing]

Remarks: Syntypes. Englehardt (1946 p. 165) states that "the type (a single fe-

male) is in the American Museum." Eichlin and Duckworth (1988) state the type from Colorado is in the AMNH. A synonym of *Albuna pyramidalis* (Wlk.) (RWH 2533).

*Aegeria opalescens* Hy. Edwards, 1881b:199.

Type locality. "3 males. Virginia City, Nevada. (H.E.)." "1 female. Colorado. (Morrison.)."

Male, "Nevada"[T]; "F. T."[T] [In fair condition, the pro and meso legs missing]

Male, "Nevada"[T]; "F. T."[T] [In good condition]

Remarks: Syntypes. The collection should have the Morrison female from Colorado, but I have been unable to locate it. Eichlin and Duckworth (1988) state that the type from Nevada is in the USNM; these two males are likely not part of the original syntypic series. A synonym of *Synanthedon exitosa* (Say) (RWH 2583).

*Pyrrhotaenia orthocarpus* Hy. Edwards, 1881b:204.

Type locality. "3 males. 1 female. On *Orthocarpus luteus*. Nutt. Washoe Lake, Nevada, (H. E.). "Type Coll. Hy. Edwards."

Male, "Nevada"[T]; "male"[symbol] [In good condition, left meta and right meso leg missing]

Male, "Nevada"[T]; "male"[symbol] [In very good condition]

Male, "Nevada"[T]; "male"[symbol] [In good condition, antennae are missing]

Remarks: The status of these specimens is not known. No mention was made by Engelhardt (1946) as to location of the type of this species. Eichlin and Duckworth (1988) state that the type is in the AMNH. A synonym of *Synanthedon polygoni* (Hy. Edw.) (RWH 2581).

*Aegeria proxima* Hy. Edwards, 1881b:201.

Type locality. "White Mts. N. H. (Morrison.) Type. Coll. F. Tepper."

Male, "W. Mts N. H."[T]; "F. T."[T]; "Type"[C] [In good condition, left antenna missing]

Remarks: The holotype (Engelhardt 1946) and (Eichlin and Duckworth, 1988). *Synanthedon proxima* (Hy. Edw.) (RWH 2572).

*Aegeria seneciodes* Hy. Edwards, 1881b:198-199.

Type locality. "1 male. California. On *Senecio douglassii*. D. C. (H. E.) 1 female. Nevada. (H. K. Morrison.) Types. Coll. Hy. Edwards. F. Tepper."

Male, "Nevada"[T]; "F. T."[T]; "Female"[symbol] [Left pro and meso and right meso leg missing; otherwise in fair condition]

Remarks: Engelhardt (1946) states that the male type of *Aegeria seneciodes* is in AMNH. Eichlin and Duckworth (1988) stated the type from California is in the AMNH. This is also a type. A synonym of *Synanthedon mellinipennis* (Bdv.) (RWH 2580).

*Pyrrhotaenia tepperi* Hy. Edwards, 1881b:203.

Type locality. "1 male. Georgia, (Morrison.)" "Type. Coll. F. Tepper . . ."

Female, "Georgia"[T]; "Type"[C]; "female"[symbol] [In poor condition, the antennae are glued to the frons, the legs missing, and portions of the wings torn]



Remarks: Engelhardt (1946) and Eichlin and Duckworth (1988) state that the (holo)type is in MSU. A synonym of *Synanthedon acerni* (Clem.) (RWH 2554).

*Aegeria verecunda* Hy. Edwards, 1881b:190.

Type locality. "1 male. 2 females. Colorado. (Morrison.)" "Type. Coll. Hy. Edwards. F. Tepper.

Female, "Col"[T]; "F. T."[T]; "Type"[C]; "female"[symbol] [In good condition]

Remarks: The holotype (Eichlin and Duckworth 1988). *Carmenta* (RWH 2615).

## Urodidae

*Penthetria parvula* Henry Edwards, 1881a:80.

Type locality. "1 male, Indian River, Florida, 1 female, Georgia." "Types Coll. Hy. Edwards. F. Tepper."

Male, "Georgia"[T]; "Type"[T] [Type in very good condition]

Remarks: Syntype. The sex of the specimen from Georgia in the original description was probably misdetermined. *Urodus* (RWH 2415).

## Geometridae

*Acidalia cacuminaria* Morrison, 1874f:195.

Type locality. "Massachusetts, about the first of July, Collection of H.K. Morrison."

Female, "cacuminaria Morr. Type, Mt. [H]orn Ms. July 6, 79"[M] [In fair condition, abdomen glued, upside down (Covell 1970).

Remarks: The holotype (Covell, 1970). *Scopula* (RWH 7157).

*Endropia decoloraria* Hulst, 1886:207.

Type locality. "2 males Coll. Graef and Tepper. No locality with either specimen."

Male "Type"[H] [In poor condition, the abdomen missing, only the right pro leg present]

Remarks: Syntype. This is a valid type specimen; the other male type is in the AMNH (Rindge, 1955). *Cepphis* (RWH 6834).

*Drepanodes effascinaria* Hulst, 1886:204–205.

Type locality. "2 females S. C. and Fla: coll. Neumoegen and Tepper. 42 mm."

Female, "S. Car."[?], "Type"[H] [In fair condition, the abdomen glued to the thorax]

Remarks: Syntype. The female syntype from South Carolina is in the AMNH (Rindge, 1955). A synonym of *Eusarca fundaria* (Gn.) (RWH 6933).

*Boarmia floridaria* Hulst, 1886:215.

Type locality. "1 male, 1 female, Fla."

Female, "Type"[H]; "Florida"[T] [Abdomen and antennae missing]

Remarks: Syntype. There is no indication in the original type series as to the source of the material. The AMNH has the male syntype from Florida (Rindge, 1955). A synonym of *Idaea violacearia* (Wlk.) (RWH 7120).

*Boarmia furfuraria* Hulst, 1888:214.

Type locality. "3 males, Col." "Expands 42mm."

Male, "Col"[T]; "Type"[H] [In good condition, the meta legs and the left antenna missing]

Remarks: Paralectotype. The lectotype of this species from Colorado is in the AMNH (Rindge, 1958). *Glena* (RWH 6446).

*Chlorosea graefiaria* Hulst 1886:123.

Type locality. "2 females, Nevada, Coll. Graef, Tepper."

Female, "Nevada"[T]; "Type"[H] [The well marked specimen missing both meta and the right meso thoracic legs]

Remarks: Syntype. The Graef specimen is in the USNM (Ferguson, 1985). *Che-teoscelis* (RWH 7068).

*Endropia helveolaria* Hulst, 1881:33-34.

Type locality. "One specimen, also one in collection of Mr. Fred Tepper, Colorado.

Male, "Col"[T] [In good condition]

Remarks: This syntype was found in the general collection. A male syntype from Colorado is also in the AMNH (Rindge, 1955). *Lychnosea* (RWH 6857).

*Endropia hilumaria* Hulst, 1886:206-207.

Type locality. "2 males Colorado. Coll. Graef, Tepper."

Male, "Col"[T]; "Type"[H] [In very good condition]

Remarks: Syntype. There is also a syntype of this species in the AMNH (Rindge, 1955). *Caripeta* (RWH 6871).

*Endropia manubiaria* Hulst, 1886:207-208.

Type locality. "2 males, 1 female Colorado. Coll. Tepper, Hulst."

Male, "Col"[T], "Type"[H] [In poor condition, the right wings, both antennae, and the right meso and meta legs destroyed]

Remarks: Syntype. *Euchlaena* (RWH 6736).

*Tetracis mellitularia* Hulst, 1886:202-203.

Type locality. "Five males, 3 females. Ariz., Nev., Cal; Coll. Hy. Edwards, Tepper, Hulst."

Male, "Nevada"[T] [In very good condition]

Remarks: Paralectotype. The lectotype is in the AMNH (Rindge, 1955). A synonym of *Pharene placheraria* (Gn.) (RWH 6949).

*Endropia occantaria* Hulst, 1886:207.

Type locality. "Two females Nev.: Coll. Graef, Tepper."

Female, "Nevada"[T] [In very poor condition, extensive dermestid damage to the abdomen and thorax, head missing]

Remarks: The holotype. Rindge (1955) reported from AMNH "a female labeled "type" from [the] Washington Territory. This is probably spurious, because the type locality is said to be Nevada." A synonym of *Euchlaena mollisaria* (Hulst) (RWH 6730).

*Hybernia olivacearia* Morrison, 1874f[1875]:200.

Type locality. "Massachusetts. From April 20th to May 5th."

Male, "*olivacearia* Morr. Type. Cambridge. M[s] 4. 30 155"[M] [In very good condition]

Male, "5.20"[M]; "Cambridge"[M] [In excellent condition]

Female, "4/25"[M]; "Cambridge"[M] [In very good condition]

Remarks: Paralectotypes. Rindge (1955) designated a male in the MCZ as the lectotype. A synonym of *Phigalia strigataria* (Minot) (RWH 6660).

*Tornos robiginosus* Morrison, 1874g[1875]:218.

Type locality. "Waco, Texas."

Female, "Bastrop Texas"[M] [Right antenna missing, otherwise in good condition]

Remarks: Paralectotype. This specimen was found in the general collection. I have dissected this specimen and it is *scolopacinaris*. The lectotype is in the USNM (Rindge, 1954). *Tornos scolopacinaris* (Gn.) (RWH 6486).

*Nemoria tepperaria* Hulst 1886:122.

Type locality. "1 male, 1 female, Ga. N. Car. Coll Edwards, Tepper."

Male, "Ga"[H]; "Type"[H] [The type is in poor condition. The antennae are broken near base, the right pro and meso and left pro legs are also missing]

Remarks: Syntype. This male was part of the original type series. Ferguson (1985) stated that the (syn)type from N. Car. is in the USNM. *Chloropteryx* (RWH 7075).

*Tephrosia texanaria* Hulst, 1888:216.

Type locality. "Eight males, six females."

Male, "Tex."[ty]; "Type"[H] [Abdomen and antennae missing]

Male, "Tex."[ty] [The well marked specimen is in good condition, only the right prothoracic leg is missing]

Remarks: Paralectotype. The original description gave no information on the location of the types, but the male marked "Type" is in Hulst's hand and is typical (red border) for his type labels. Given the large number in the original series, it is likely that the other males marked with the same small "Tex" and the other without information are also part of the type series. The lectotype of this species was designated by Rindge (1973). *Glenoides* (RWH 6443).

*Boarmia wrightiaria* Hulst, 1888:215.

Type locality. "4 females." "Taken at San Bernardino, Calif."

Male, "So. Cal."[ty]; "Type"[H] [In poor condition, only the left meta leg present, the right antenna missing and the abdomen destroyed by dermestids. The genitalia appear to be intact]

Remarks: Paralectotypes. The lectotype of this species is in the AMNH (Rindge, 1955, 1970). *Hulstina* (RWH 6547).

## Limacodidae

*Parasa fraterna* Grote, 1881c:4–6.

Type locality. "N.Y., Mass., Mr. Roland Thaxter; also in Mr. Tepper's collection."

Female, "Type"[T] [Very good condition]

Male, "ex L. June 17, 74." [T]; "Type" [T] [Very good condition]

Remarks: Syntypes. A synonym of *Parasa chloris* (H.-S.) (RWH 4698).

## Saturniidae

*Attacus cinctus* Tepper, 1883:65–67, 1 plate.

Type locality. "Eight specimens served as types. Southern Arizona."

Female, "Arizona"[T]; "Original Type"[T] [In fair condition, right antenna missing, left meso and meta legs missing]

Female, "Arizona"[T]; "Original Type"[T] [In poor condition, dermestid damage to the abdomen]

Remarks: Paralectotypes. The lectotype was designated by Ferguson (1972). *Rothschildia cincta* (RWH 7760).

### Sphingidae

*Sphinx albescens* Tepper, 1881:1-2.

Type locality. "One male from Colorado, taken by Mr. H. K. Morrison, in my coll."

Female, "Col"[T]; "Type"[T] [In poor condition, the abdomen is partially destroyed by dermestids, and reglued to the specimen]

Remarks: The holotype. This type was found in the general collection. A synonym of *Sphinx vashti* (Stkr.) (RWH 7803).

### Notodontidae

*Drynobia tortuosa* Tepper, 1881:2, plate 2 figure 2.

Type locality. "One male from Colorado collected by Mr. H. K. Morrison. Type in my collection."

Male, "Col"[T]; "Type"[T] [In very good condition]

Remarks: This holotype was found in the general collection. *Hyperaeschra* (RWH 7918).

### Noctuidae

*Charadra decora* Morrison, 1875:55.

Type locality. "California."

Female, "Calif" [T] [In poor condition, left antenna, left and right meta legs missing, dermestid damage to abdomen]

Remarks: The holotype. This specimen was found, unlabeled, in the general collection. *Lichnoptera* (RWH 9187).

*Agrotis acclivis* Morrison, 1875f:93-94.

Type locality. "New York from the Tepper collection."

Male, "Long Island 191"[M]; "Type"[C] [In fair condition; some dermestid damage, right antenna missing]

Male, "1706"; "Type"[C] [In fair condition; both meso legs missing, the right antenna and the valves partly destroyed]

Remarks: The male, from Long Island, is selected, labeled, and designated as the lectotype. *Loxagrotis* (RWH 10870); *Richia* Poole (1989).

*Hadena adnixa* Grote, 1880a:243.

Type locality. "Nevada; Tepper. *Expanse* 38 mil."

Male, "Nevada"[T]; "Type"[T] [In very good condition, the right antenna missing]



Remarks: This specimen was found in the general collection with a 'type' label hidden under the first label. Poole (1989) stated the type was at the BM, but Smith (1893) indicated the type(s) was in the Tepper collection. In the absence of additional Tepper type material, this is likely the holotype. *Aseptis* (RWH 9533).

*Hadena albina* Grote, 1874b:157.

Type locality. "California (Mr. Behrens, No. 78, Sauzalito, May 15). Two specimens."

Female, "Calif"[T]; "Type"[C] [In good condition; the left meso and meta and the right pro and meta legs missing]

Remarks: Smith (1893 p. 138) states that "the 'type' is in the British Museum; but I am not sure it is a fair representative of the species Mr. Grote meant to describe. It seems to be really a form of *castanea*, as Mr. Grote suggested; but the specimen in the Tepper collection also marked type by Mr. Grote, is more nearly allied to *arctica*, and is a good species as shown in my Revision." The remark by Smith would suggest that the specimen in MSU was labeled type by Grote, but the presence of the rhomboidal label brings this conclusion into question since this is a Cook label. This makes it uncertain if indeed this specimen was seen by Grote at the time of description. Poole (1989) stated that the type is in the BM, however, in Cook's accession notes, "type" is written next to the name in his hand. The type status of this specimen remains uncertain, but is likely not a type. A synonym of *Apamea castanea* (Grote) (RWH 9347).

*Hypena albopunctata* Tepper, 1881:2, plate 1, figure 5.

Type locality. "One male from Wash. Ter., collected by Mr. H. K. Morrison, in my collection."

Male, "W.T."[M]; "Type"[T] [Poor condition, legs and antennae missing]

Remarks: The holotype. A synonym of *Hypena humuli* Harris (RWH 8461).

*Orthosia americana* Morrison, 1875c [1876]:434.

Type locality. "Mr. W. V. Andrews of Brooklyn has been so kind as to send me from his collection a specimen taken in N.J."

Male, "N.J."[?]; "Type"[C] [A well marked specimen in fair to poor condition, dermestid damage to thorax and abdomen, left antenna missing]

Remarks: The holotype. A synonym of *Agrochola lota* (Clerck) (RWH 9956).

*Acronycta aspera* Morrison, 1874b[1875]:132.

Type locality. "Adirondack Mts., N.Y."

Female, "N.Y."[T]; "*aspera* Morr Type. [A]dr Mts. N. Y. 124"[M] [Type in very good condition]

Remarks: The holotype. A synonym of *Andropolia contacta* (Wlk.) (RWH 9564).

*Mamestra assimilis* Morrison, 1874c:113.

Type locality. "Massachusetts. Collection of H. K. Morrison."

Male, "Tepper"[ty]; "Type"[C] [Specimen in fair condition, right antenna and meso and meta legs missing, valves partly destroyed]

Remarks: The holotype (McCabe, 1980). *Melanchra* (RWH 10295).

*Eurois astricta* Morrison, 1874b[1875]:135.

Type locality. "New Hampshire."

Male, "W. M." [M] [In good condition]

Female, "W. M." [M] [In fair condition, left antenna missing, right wings broken off]

Remarks: These specimens from the White Mountains of NH were found in the general collection. They are likely the types of this species. The male, is hereby selected, labeled and designated as the lectotype of *E. stricta*. Poole (1989) states that the type is in MSU (RWH 10930).

*Metahadena atrifasciata* Morrison, 1875c[1876]:431-432.

Type locality. "Orono, Maine. (Prof. C. H. Fernald)."

Female, "Maine" [M]; "121"; "Tepper" [ty]; "Type" [C] [Condition of specimen is quite poor, considerable damage from verdigris]

Male, "Maine" [M?] [Very good condition]

Male, "Maine" [T] [Very good condition]

Remarks: Syntypes. The two males were found in the general collection. It is uncertain whether these specimens were part of the original series. Smith (1893) states types are in both Tepper collection and BMNH. A synonym of *Oncocnemis piffardi* (Wik.) (RWH 10123).

*Orthosia belangeri* Morrison, 1874b[1875]:149.

Type locality. "Quebec, Canada."

Male, "Canada" [T]; "Type" [C] [Type in good condition, right antenna, pro and meso legs missing]

Remarks: The holotype. Type material for this species was not found at the BMNH (Mikkola, pers. comm. 1992). A synonym of *Apamea inficita* (Wik.) (RWH 9369).

*Agrotis binominalis* Smith, 1888a:451.

Type locality. "California, Washington Territory."

Male, "W.T." [M]; "Type" [T] [In poor condition, verdigris damage to the abdomen, both pro and right meso leg missing]

Male, "W.T." [M]; "Type" [C] [In poor condition]

Remarks: Paralectotypes. Todd (1982) found three specimens, two males from W.T. and a female from California curated as types of *binominalis*. He chose not to recognize the MSU specimens as types and went ahead and labeled a specimen in the AMNH as the lectotype. What he probably did not realize was that the type of *exsertistigma*, a female, was curated under a more recent combination, *Rhynchagrotis* [sic] *binominalis*. This female, discussed in Todd (1982) under *binominalis*, is probably the type of *exsertistigma*. Like many types of the time, no name is affixed to the type. The males above were part of the original type series of *binominalis*, and are therefore paralectotypes of this name. A synonym of *Rhynchagrotis exsertistigma* (Morr.) (RWH 11047); misspelled as *exertistigma* in Hodges (1983).

*Eucalyptera bipuncta* Morrison, 1875f:104.

Type locality. "Massachusetts. Taken at Belmont, Aug. 17, 1874."

Male, "*bipuncta* Morr Type. Cam. Ms. Aug 7 275" [M]; "Type" [C] [Type slightly worn, the abdomen and right antenna missing]

Remarks: The holotype. The type locality "Belmont" in the original description

vs. "Camb" on the specimen are not in agreement, as is the date which was likely a transcriptional error. Belmont, however, is very near Cambridge and is probably referable to this specimen, the date discrepancy is likely a transcriptional error. A synonym of *Gabara subnivosella bipuncta* (RWH 8522a).

*Agrotis bocha* Morrison, 1874b[1875]:163.

Type locality. "Nebraska, Colorado."

Female, "Colorado 202"[M]; "Tepper"[ty] [Right forewing damaged; the left forewing missing and only the left pro leg present]

Remarks: This holotype was found in the general collection, unlabeled. M.C. Nielsen brought this specimen to my attention as a suspected type. Hardwick (1970:156) stated that the "monotype of *bocha* should be in the Tepper Collection at MSU, but a thorough search has failed to uncover the specimen and it must be presumed lost." The Colorado specimen was not found in the general collection. *Crassivesica* (RWH 10913).

*Luceria burgessi* Morrison, 1874c:109.

Type locality. "Tuckernuck Island, near Nantucket. Four specimens taken by Mr. Bigelow, and now in the collection of Edward Burgess and H. K. Morrison."

Male, "Type"[C]; "Nantucket 43"[M] [Excellent condition]

2 Females, no data [Excellent condition]

Remarks: Syntypes. Although Poole (1989) indicated that the types are in the BMNH, Kauri Mikkola (pers. comm. 1992) was unable to find it there; his feeling is that these three specimens comprise what remain of the original type series. Although uncommon, sometimes Morrison's additional specimens do not bear any other data when taken at the same locality. The fourth specimen of the type series must be presumed lost. In a forthcoming publication, Mikkola and Lafontaine will designate the male listed above as the lectotype (Mikkola, pers. comm. 1995). *Crymodes* (RWH 9378).

*Heliothis californicus* Grote, 1873c:149.

Type locality. "California (Mr. Hy. Edwards, No. 9). Four specimens examined."

Male, "*californicus* Grt, Type. California 299"[M] [Left meta leg absent, left antenna broken at base, abdomen whole but excavated by dermestids, genitalia destroyed]

Remarks: Paralectotype. A total of six specimens were curated as types for *suetus* Grote, one of which was the male type of *californicus*. The Tepper collection accession notes indicate types of *californicus* were received with the Tepper collection. Smith (1893) state that one type was in Tepper's collection, another in the BMNH. Hardwick (1958, 1996) designated the specimen in the BMNH as the lectotype. *Schinia sueta californica* (RWH 11088a).

*Thalpochares carmelita* Morrison, 1875c [1876]:434–435.

Type locality. "Dallas, Texas (Mr. Boll)."

Male, "Dallas Tex. Boll"[ty]; "Type"[C] [Specimen in excellent condition, verdigris building around the thorax of the specimen]

Remarks: Syntype. The original extent of the type series is not known. Poole (1989) states that the type is in the MCZ, but this specimen is also likely a type. A synonym of *Eumicremma minima* (Gn.) (RWH 9076).

*Hadena castanea* Grote, 1874b[1875]:156.

Type locality. "California (Mr. Behrens, three specimens with the number 10 and 20)."

Male, "Calif. "[T]; "Type" [C] [In very good condition]

Remarks: The status of this type is not known. A total of 6 specimens were curated as types for this name, 5 poor specimens were Tepper's from the Washington Territories. The species was described from California, and the male so marked is probably the only potentially valid type, however, the absence of the red number labels indicated by Grote in the original description places this conclusion into question. A total of 8 specimens were noted in the Tepper collection accession notes, and "type" is written next to the name in Cook's hand. *Apamea* (RWH 9349).

*Hadena characta* Grote, 1880a:243.

Type locality. "Nevada; Mr. Tepper."

Female, "Nevada" [T] [In very good condition]

Remarks: The status of this type is not known. This specimen was found in the general collection without a type label. Smith (1893) stated that the type was in the BM and that "another typical specimen" was in the Tepper collection. I have not been able to confirm the presence of this type in the BM. *Aseptis* (RWH 9543).

*Agrotis comosa* Morrison, 1876:238.

Type locality. "Colorado T. L. Mead."

Male, "Type" [C]; "Colorado Aug 7 1872 193" [M] [In poor condition; the abdomen and legs and left antenna missing]

Remarks: The holotype (LaFontaine, 1987). *Euxoa* (RWH 10780).

*Agrotis confusa* Smith, 1888a:452.

Type locality. "Washington Territory."

Female, "W. T." [M]; "Type" [C] [In very good condition]

Female, "W. T." [M]; "Type" [C]; "1599" [?] [Extensive damage by verdigris on thorax]

Remarks: Paralectotypes. Todd (1982) designated a specimen at the USNM as the lectotype. A synonym of *Rhynchagrotis insularis* (Grt.) (RWH 11048).

*Hadena congermana* Morrison, 1874d:106.

Type locality. "A rare species. *Hab.* New York, and one specimen taken at Beverly, Mass., June 24, 1867, by Mr. Edward Burgess . . ."

Male, "Beverly Ms. June 24, 1867 25" [M]; "Type" [C] [In excellent condition, left antenna missing]

Female, "N.Y. State" [M] [In excellent condition]

Male, "N.Y. State" [M] [In poor condition, extensive dermestid damage to the thorax, head missing]

Remarks: The data of the male from MA matches perfectly with the original description; it is selected and hereby designated as the lectotype. *Sideridis* (RWH 10266).

*Taeniocampa confluens* Morrison, 1874b[1875]:159-160.

Type locality. "St. Louis, Mo. Prof. C. V. Riley."

Female, "*confluens*, Morr Type, Cen. Missouri 413" [M] [In poor condition, antennae missing, abdomen and thorax severely excavated by dermestids.]



Remarks: The holotype. A synonym of *Orthosia hibisci* (Gn.) (RWH 10495).

*Homophoberia cristata* Morrison, 1875b:125.

Type locality. "Hoboken, N.J. One specimen kindly presented to us by Mr. Herman Sachs."

Female, "N.J." [?] [In very good condition, the antennae missing]

Remarks: This specimen was found unlabeled in the general collection and is probably the holotype of *cristata* (RWH 9056).

*Tarache crustaria* Morrison, 1875d:70–71.

Type locality. "Nebraska. Described from material given us by Mr. G. M. Dodge."

Male, "Type" [C]; "Type Nebraska 258" [M] [In good condition]

Male, "Nebr" [?]; "Type" [C] [In poor condition; the specimen damaged by dermestids, the abdomen and wings glued onto the specimen]

Remarks: The male in good condition marked type by Morrison is selected, labeled and now designated as the lectotype. *Pseudacontia* (RWH 10172).

*Mamestra curta* Morrison, 1875f:96.

Type locality. "Colorado, July 20 and 22."

Male, "Colorado" [T]; "curta, Morr, Type. Colorado. 7. 22 220" [M] [A well marked specimen in poor condition; dermestids appear to have excavated the thorax and abdomen but the genitalia appear to be intact. The legs are absent and the abdomen has been glued at the base of the thorax.]

Female, "curta Morr Type. Colo July 20 220" [M] [In very good condition]

Remarks: The holotype. A subspecies of *Lasiestra impingens* (RWH 10339a).

*Agrotis decolor* Morrison, 1874b[1875]:162.

Type locality. "New York; Massachusetts; Maine."

Male, "New York" [M] [Very good condition, left hindwing margin partially damaged]

Male, "New York" [M] [In fair condition, head missing]

Female, "New York" [M] [In excellent condition, left antenna missing]

Remarks: This material was found in the general collection and not labeled as a type. Poole (1989) states the type is in MSU. LaFontaine (1987) declared the type lost. The specimens before me agree with the original description and all were probably in the original type series. I hereby designate the first male as the lectotype. A synonym of *Euxoa declarata* (Wik.) (RWH 10755).

*Syneda deducta* Morrison, 1874g[1875]:220–221.

Type locality. "Waco, Texas."

2 females, "Texas" [?] [In very good condition]

Remarks: Syntypes. These specimens were found in the general collection. There is also an unsexed specimen from "Tex" in the MCZ. *Bulia* (RWH 8614).

*Caradrina derosa* Morrison, 1875b:121.

Type locality. "New Jersey. Received from Mr. W. V. Andrews."

Female, "N.J." [T] "Type" [T], "Fr. Australia=*nitocris capularis*." [S] [The antennae, right legs and abdomen destroyed by dermestids]

Remarks: The holotype; extralimital. A synonym of *Rictonis capularis* (Gn.) (Poole, 1989).

*Agrotis digna* Morrison, 1875b:115.

Type locality. "Texas."

Male, "21/9[?]" ; "Texas"[T] [In very good condition]

Female, 4/8.[?]" ; "Texas"[T] [Right antenna missing, otherwise in good condition]

Remarks: Status uncertain. This type was found unlabeled in the general collection. Smith (1893) stated that the type, a single specimen, was in the Tepper collection and another in the Peabody Academy of Sciences. *Euagrotis* (RWH 10908).

*Orthosia differta* Morrison, 1875d:67.

Type locality. "New York. Received from. . . Mr. Fred Tepper."

Male, "Type"[M]; "*differta* U.S. Morr"[T] [A well marked specimen with all legs missing except the right metathoracic]

Remarks: The holotype. Hardwick (1996) had no information regarding the location of this type. A synonym of *Rhodoecia aurantiago* (Gn.) (RWH 11065).

*Heliothis diminutivus* Grote, 1873c:148-149.

Type locality. "California (Mr. Hy. Edwards, No 204). Ten specimens examined."

Female, "California"[M]; "Type[C] [In good condition, right antenna missing]

Female, "Cal."[?] [In good condition, only right pro and meso legs present]

Female, no labels. [Right pro and meso legs missing, in good condition]

Remarks: Paralectotypes. Hardwick (1996) designated a specimen in the USNM as the Lectotype. Smith (1893: 291) stated that the "types are in the Tepper Collection and in the British Museum." *Heliothodes diminutivus* (RWH 11058).

*Lithophane disposita* Morrison, 1874c:109.

Type locality. "Canada, Mass., New York. In April and May."

3 males, "New York"[M] [All three in very good condition except one without an abdomen]

Remarks: Syntypes. These specimens were found in the general collection and probably were part of the original type series of *disposita* (RWH 9892). Type(s) at MSU (Poole 1989).

*Demas diversicolor* Morrison, 1874b[1875]:132-133.

Type locality. "New York. From my collection. Massachusetts, Sept. 16, 1874. (Mr. Roland Thaxter)."

Male, "Tepper"[ty]; "Massachusetts 232"[M] [Type in good condition with left forewing torn]

Male, no data. [Left legs missing, well marked]

Female, no data. [Legs and left antenna missing]

Remarks: Only one type in the collection is labeled, and this is the MA specimen. The status of the two unlabeled specimens is not known. Smith (1893: 146) states that "the type is in the Tepper collection; another specimen is in the British Museum and is also marked type" while Poole (1989) states the type is at MSU. Lynnette Warshaw (pers. comm. 1994) indicated 2 specimens from the 14th and 31st of September from Newtonville MA with the label R[oland].T[haxter].C[ollection]. at the MCZ. It is not known whether types of this species are at the BMNH. The MCZ material is likely the better candidate for lectotype designation. *Meropleon* (RWH 9427).

*Mamestra dodgei* Morrison, 1875a:90–91.

Type locality. “Nebraska (G.M. Dodge).”

Male, “Nebr”[?]; “*Mamestra Dodgei*, Type Mor”[M] [In very good condition, right antenna missing]

Remarks: The holotype. A synonym of *Lacinipolia lorea* (Gn.) (10405).

*Heliaca dubitans* Tepper, in Smith 1883:246.”

Type locality. “Nevada.”

Male, “Type”[C]; “Nevada”[T] [In excellent condition]

Remarks: Holotype (Hardwick 1996). A synonym of *Schinia perminuta* (Hy. Edw.) (RWH 11091).

*Taeniocampa earina* Morrison, 1874b[1875]:158–159.

Type locality. “California.”

Female, “*earina*, Morr Type California 412”[M] [Some verdigris at the base of the pin, right antenna missing]

Remarks: The holotype. The author of *earina* is not Harvey in (Hodges, 1983). A synonym of *Lasionycta insolens* (Grt.) (RWH 10366).

*Dicopsis electilis* Morrison, 1875b, 114–115.

Type locality. “Easton, Penn. From Mr. W. H. Stultz.”

Female, “Type”[C] [In poor condition with dermestid damage to abdomen and maculation somewhat rubbed]

Remarks: The holotype (Poole, 1994). *Psaphida* (Poole, 1989, 1994) (RWH 10012).

*Agrotis exsertistigma* Morrison, 1874b[1875]:166.

Type locality. “California.”

Female, “So Cal”[T]; “Ty[pe]”[C] [Specimen in excellent condition]

Remarks: This female was curated as a type of *binominalis* (see *binominalis*) but I have reason to believe that this is the Morrison type of *exsertistigma*, and curated under the Smith name. In Smith (1893) he states that “this is the *exsertistigma* of the Edwards collection, and like one specimen so labeled [*exsertistigma*] in Mr. Tepper’s collection.” Which may be interpreted as stating that the type of *exsertistigma* is to be found at MSU even though there was no type for that name curated in the collection. I would expect the type for *exsertistigma* to be at MSU since it is a Morrison name, and it is likely that the female above, curated with male types of *binominalis*, is in fact the type for *exsertistigma*; (RWH 11047); misspelled as *exertistigma* in Hodges (1983). A synonym of *Rhynchagrotus formalis* (Crt.).

*Agrotis extranea* Smith, 1888a:459.

Type locality. “Montana. A single female specimen from Mr. Tepper.”

Female, “Mt. Hood”[T]; “Type”[C]; “*Euxoa* slide MSU No. 12.”[In very good condition, the prothoracic legs missing]

Remarks: The holotype (Lafontaine, 1987). *Euxoa* (RWH 10708).

*Segetia fabrefacta* Morrison, 1874b[1875]:146–147.

Type locality. “One specimen taken at Tuckernuck Island near Nantucket, and now in the collection of A. R. Grote. Another taken at Brooklyn, N.Y., in my possession.”

Male, "Tepper"[T]; "New York 103"[M]; "Type"[C] [The well marked specimen is in poor condition, the right wing has fallen off, the abdomen is lost to dermestid damage, and the legs and right antenna are missing.]

Remarks: Syntype. The male above is likely the Morrison specimen mentioned in the original description. There is no specimen in the series labeled Nantucket or Tuckernuck Island, and since this was in Grote's collection, it is presumed that this specimen is in the BMNH (Poole, 1989). A synonym of *Platysenta sutor* (Gn.) (RWH 9699).

*Lithophane fagina* Morrison, 1874c:115-116.

Type locality. "Cambridge Mass., April 15, 1874. From my collection."

Male, "Type"[C]; "*fagina* Morr. Type. Camb. Ms 4,15 1874"[M] [The thorax severely damaged by verdigris and the right wings appear to have been glued to the thorax]

Remarks: The holotype (RWH 9917).

*Agrotis fauna* Morrison, 1876:237.

Type locality. "Guadaloup island, lower Cal."

Male "Type"[C]; "*Euxoa* slide MSU No. 15"[ty] [Type in poor condition, legs broken and damaged by dermestids, left antenna missing]

Remarks: The holotype. Smith (1893: 98) states that the "type, a miserable specimen, is in the Tepper Collection." Extralimital (Poole, 1989).

*Pachnobia ferruginoides* Smith, 1890:56.

Type locality. "Montana."

Male, "Montana"[T]; "Type"[C] [In good condition]

Female, "Montana"[T]; "Type"[C] [Excellent condition]

Remarks: Paralectotypes. Todd (1982) designated a USNM specimen as the lectotype. A synonym of *Paradiarsia littoralis* (Pack.) (RWH 10992).

*Dryobota fibulata* Morrison, 1874c:112.

Type locality. "Quebec. Can., in my collection from F.X. Belanger."

Female, "*Dryobota fibulata* Morr Can Type"[M,T] [Abdomen and antennae absent, markings prominent]

Remarks: The holotype. The specimen is unusual in that Morrison departs from his trademark triangular label and uses a square label. The words "*Dryobota fibulata* Morr Can" appear to be in Morrison's hand, and a portion of the "Q" in Quebec appears to have been cut off the label. "Type," on the other hand, is written in red ink in Tepper's hand. A synonym of *Eremobina claudens* (Wlk.) (RWH 9396).

*Segetia fidicularia* Morrison, 1874b[1875]:145.

Type locality. "Adirondack Region, N. Y. A single specimen in the collection of my friend Mr. F. C. Bowditch, of Harvard Law School."

Female, "Milford N. H. 94"[M]; "*Segetia fidicularia* Morr. 94"[M] [Right antenna, left pro and meso and right meso and meta legs missing, mold damage]

Remarks: This specimen was found, unlabeled in the general collection. The locality of this specimen does not match the original description; it is not known if this is the type. Neither Smith (1893) or Poole (1989) indicated the location of the type. It is, however, possible that the locality discrepancy is an error in the original



description. In the absence of other convincing type material, this specimen with a determination by Morrison, may be a good candidate as a type. A synonym of *Caradrina multifera* (Wlk.) (Poole, 1989) (RWH 9657).

*Heliophila flabilis* Grote, 1881a:15.

Type locality. "Long Island, near the sea shore, in May; Mr. Tepper."

Male, "L. I. May 20 [18]77,"[T]; "Type"[C] [Type in fair condition; both meso legs and right antenna missing]

Remarks: Syntype. Smith (1893 p. 189) states the "types are in the Tepper collection and in the British Museum. The species was described from material taken by Mr. Tepper." Poole (1989) states that the type is in the BMNH. A synonym of *Leucania extincta* (Gn.) (Poole, 1989) or subspecies of *L. extincta flabilis* (RWH 10439a).

*Agrotis flavicollis* Smith, 1888a:456.

Type locality. "Montana. One female specimen from Mr. Tepper's collection."

Female, "Montana"[T]; "Tepper"[ty]; "Type"[C]; "Euxoa slide MSU No. 13"[ty] [In good condition, but only the right meso and left meta leg present]

Remarks: The holotype (Todd, 1982). *Euxoa* (RWH 10864).

*Homohadena fortis* Grote, 1880a:257.

Type locality. "Nevada."

Female, "Nevada"[T]; "Type"[C] [In very good condition, the left pro and right pro and meso legs and right antenna missing]

Remarks: Status uncertain. Poole (1989) states that the types are in the BMNH. Smith (1893) stated the type was in the Tepper collection. In the absence of other material, this is probably the holotype. *Homoncoenemis* (RWH 10068).

*Ablepharon fumosum* Morrison, 1874a:275.

Type locality. "Massachusetts. May 24th and 26th. Coll. H. K. Morrison."

Male, "Cambridge, Ms 5/21 288"[M]; "Type"[C] [In excellent condition]

Male, "Cambridge, Ms 5/30 288"[M]; "Type"[C] [In excellent condition]

Remarks: Status uncertain. Although the precise day of May is not in agreement with the original description, it is difficult to conclude that these are not syntypes. A synonym of *Simyra henrici* (Grt.) (RWH 9280).

*Hadena fuscimacula* Grote, 1881b:262.

Type locality. "No locality given."

Male, "Florida"[T]; "Type"[C] [In very good condition]

Female, "Florida"[T]; "Type"[C] [In good condition, left antenna missing]

Remarks: Poole states that the types are in the BMNH. It is not known if this specimen is also a part of the original type series. *Elaphria fuscimacula* (Grote) (RWH 9675).

*Homoptera galbanata* Morrison, 1875c[1876]:435-436.

Type locality. "Glencoe, Nebraska. From Mr. G. M. Dodge (No. 48)."

Male, "48"; "Type"[C] [In excellent condition]

Remarks: Probably the holotype. *Zale* (RWH 8692).

*Calocampa germana* Morrison, 1874e:192.

Type locality. "Adirondack Mountains. (Mr. Bowditch)."

2 males, 1 female, "New York" [?] [In very good condition]

Remarks: Syntypes. These specimens were found in the general collection without type labels. Poole (1989) states that the type is at MSU. Smith (1893) did not indicate the location of the type. The handwriting of the three specimens is not known, but may be that of Bowditch. A male from the above series has been selected and labeled the lectotype. A subspecies of *Lithomoia solidaginis* (RWH 9878a).

*Agrotis gladiaria* Morrison, 1874b[1875]:162-163.

Type locality. "Massachusetts."

Male, "Cambridge Mass. 177" [M]; "Type" [C] [Right antenna missing, otherwise in very good condition]

Remarks: The original number of types at the time of description is not known. If no other type material of this species is found, this is probably the holotype. There may be additional material for this species at other collections (RWH 10648).

*Melicleptria graefiana* Tepper, 1883:245.

Type locality. "Southern California."

Male, "So Cal" [T] [In fair condition, only left pro leg present, left antenna broken]

Male, "So Cal" [?] [In good condition, the right antenna missing]

Female, "So Cal" [T] [Only left meso leg is present]

Remarks: The specimens above were curated as types for this species but are not, the holotype is at the USNM (Hardwick, 1996). Hardwick (1958) acknowledged the above specimens as *Schinia pulchripennis* (Grt.). Since California is the type locality for *Schinia pulchripennis*, there is a strong chance that the type(s) above represent the type series for *pulchripennis*, types which Hardwick (1996) presumed lost.

*Valeria grotei* Morrison, 1874a:274.

Type locality. "Massachusetts. Specimens taken in Cambridge from April 10th to 26th, coll. H. K. Morrison."

Male, "grotei, Morr. Type, Cambridge M[a]", April 14, 331" [M]; "Type" [C] [A well marked specimen in good condition; left pro and meso legs and antenna missing]

Remarks: The holotype (Poole, 1994). The location of the other specimens indicated in the description is not known, nor does Poole (1994) mention these other specimens. *Copivaleria* (RWH 10021).

*Schinia hultstia* Tepper, in Smith 1883:228.

Type locality. "1 female Texas? Type, Coll. Tepper."

Female, "Texas" [?]; "Type" [C] [In fair condition]

Remarks: The holotype (Hardwick, 1996) (RWH 11193).

*Mamestra illabefacta* Morrison, 1874c:141-142.

Type locality. "Beverly, Mass. June 26, 1869, Edward Burgess."

Male, "illabefacta Morr. Type Beverly, Mass 18" [M] [In very good condition, the left pro and meta leg and left antenna missing]

Remarks: Smith (1893: 123) stated that there is a type "in the Tepper collection, and another . . . in the British Museum." McCabe (1980) did not indicate the location of the type. Given all the trademarks of Morrison, and despite the discrepancy in the date of capture, this is likely the holotype. A synonym of *Lacanobia lilacina* (Harvey) (RWH 10307); *Trichordestra* (Poole, 1989). Misspelled as *illebefacta* in Hodges (1983).

*Acronycta increta* Morrison, 1874c:131.

Type locality. "New York. Several specimens received from Messrs. Fred Tepper and E. L. Graef. Types in the collections of the Buffalo Society of Natural Sciences, and H. K. Morrison."

Female, "Brooklyn N. Y." [M]; "Type" [T] [The well marked specimen has the right wing missing]

Remarks: Syntype. The location of the other specimens is not known. *Acronycta* (RWH 9249).

*Laphygma inflexa* Morrison, 1875d:65–66.

Type locality. "Jacksonville, Fla."

Female, "Florida" [T]; "[illegible]"; "Type" [C]; "=*Lyssa* (*Laphygma*) *filifera* Wlk." [Sm] [In good condition]

Remarks: The holotype. A synonym of *Collomena filifera* (Wlk.) (RWH 8982).

*Agrotis infracta* Morrison, 1875b:115.

Type locality. "Colorado (T. L. Mead); Texas (Belfrage)."

Female, "Col" [T]; "Type" [C]; "*Euxoa* slide MSU No. 3" [ty] [In fair condition]

Male, "Col" [ty]; "male." [symbol] [In poor condition, the antennae are missing and the right valve missing]

Remarks: The male was found in the general collection. Lafontaine (1987) stated that he had designated the female as the lectotype, but no such label was found on the specimen. I have since added a lectotype label. *Euxoa* (RWH 10850).

*Hadena inordinata* Morrison, 1875d:63.

Type locality. "Massachusetts, in June from our collections."

Female, "Mass" [M]; "Newtonville June 16, 1874" [M]; "Type" [C] [In very good condition]

Remarks: The original "from our collections" hints that there were a number of specimens. The absence of an explicit indication of the name *inordinata* is not typical of Morrison. In the absence of more convincing material, this may be a good candidate for lectotype designation. This is certainly a type if no other types exist. *Apamea* (RWH 9353).

*Taeniocampa intractata* Morrison, 1874b[1875]:160–161.

Type locality. "Habitat, St. Louis, Mo., Prof. C. V. Riley."

Male, "*intractata*, Morr Type, Cen. Missouri 414" [M]; "Type" [C] [In good condition, antennae missing]

Female, no data. [Right hindwing and antennae missing]

Male, no data. [Extensive dermestid damage to abdomen and thorax]

Remarks: Syntypes. The status of the male and female without data is not known. The labeled male is undoubtedly a valid type, however, Poole (1989) also indicates that a type is at the USNM. *Himella fidelis* (RWH 10502).

*Oncocnemis iricolor* Smith, 1888b:19.

Type locality. "Colorado. Three specimens, all females, 1 Coll. U.S. National Museum (Smith Coll.) the others Coll. F. Tepper."

Female, "Col" [T]; "Type" [C] [In fair condition, some dermestid damage to the abdomen, left pro leg missing]

Female, "Col"[T]; "Type"[C] [Antennae missing, well marked]

Remarks: The females above are paralectotypes. Todd (1982) designated a specimen in the USNM as the lectotype (RWH 10092).

*Plusia laticlavia* Morrison, 1875f:98.

Type locality. "New York. July 10, 1872. Described from a single specimen in good condition received from Mr. Fred Tepper."

Male, "L. I. July 10, 1872"[T]; "Type Morr"[M]; "laticlavia"[?] [In very good condition, right meta leg missing]

Remarks: The holotype. There were fully three different plusiine species in this "type" series. From the original description, however, it is clear that Morrison had but a single specimen at the time of description. A synonym of *Argyrogramma basigera* (Wlk.) (RWH 8886).

*Panthea leucomelana* Morrison, 1875c[1876]:428.

Type locality. "Maine."

Male, "Maine"[T] [Both metathoracic legs missing]

Remarks: This specimen was found in the general collection without a type label. This is very likely the holotype. Poole (1989) states the type is at MSU. A synonym of *Panthea acroncytoides* (Wlk.) (RWH 9177).

*Luceria loculata* Morrison, 1874c:110.

Type locality. "Mass., New York. Four specimens examined and one of var. *conspicua*."

Male, "*loculata*, Morr Type Boston, MS, 44"[M] [A well marked specimen with hollow abdomen, genitalia appear intact]

2 males, no data. [Well marked but with some verdigris on thorax]

Remarks: Syntypes. The location of the additional type material, or the status of the two unlabeled males is not known. A synonym of *Luperina passer* (Gn.) (RWH 9391).

*Luceria loculata* var. *conspicua* Morrison, 1874c:111.

Type locality. "Mass., New York. Four specimens examined and one of the var. *conspicua*."

Male, "Boston Ms 59"; "Type"[M] [In good condition, extensive damage to abdomen and genitalia]

Remarks: One specimen is indicated and presumed to be the holotype. The type locality of *conspicua* is not clearly indicated in the original description. A synonym of *Luperina passer* (Gn.) (RWH 9391).

*Heliothis lucens* Morrison, 1875d:69.

Type locality. "Mass., Nebraska."

2 males, 3 females, "Nebr."[M] [In very good condition]

Remarks: Paralectotypes (Hardwick 1996). These five specimens were in the general collection and not labeled as types. Only one label appears to be in Tepper's hand, the other in Morrison's. *Schinia* (RWH 11174).

*Penthetria majuscula* Henry Edwards, 1881a:80.

Type locality. "Georgia. H. K. Morrison. Type. Coll Hy. Edwards. Female. Type. F. Tepper."



Female, "Ga"[T]; "female"[?]; "Type"[C] [In fair condition, the antennae missing]  
Remarks: Syntype. The male syntype is at the AMNH (Poole, 1989). A synonym of *Cydosia aurivitta* (RWH 8999).

*Agrotis manifesta* Morrison, 1875d:116.

Type locality. "Described from specimens in the collection of Mr. Fred Tepper. Hab. New York. In May."

Female, "Flatb[ush] May 25/72"[T]; "Type"[T] [In very good condition]

Male, "Flatb[ush] May 25/72"[T]; "Type"[C] [In poor condition, dermestid damage to head, thorax, and abdomen]

Remarks: Syntypes. Lectotypes have not been designated due to the poor quality of this material. Hodges (RWH 10666).

*Agrotis manifestolabes* Morrison, 1874b[1875]:166.

Type locality. "Massachusettes, in the early spring."

Male, "*manifestolabes* Morr. Type. Cambridge, April 29, 187[2] 183"[M] [In fair condition, the right legs and left antenna missing]

Remarks: The holotype. A synonym of *Cerastis tenebrifera* (Wik.) (RWH 10994).

*Oncocnemis meadiana* Morrison, 1875d:60–61.

Type locality. "Colorado, Aug. 18 (No. 47, Mr. T. L. Mead)."

Female, "Colo Aug, 18, 1872 216"[M]; "Type"[C] [Specimen in good condition]

Remarks: The holotype (RWH 10098).

*Caradrina meralis* Morrison, 1875g:215.

Type locality. "Maine. Collection H. K. Morrison."

Male, "Maine"[M]; "Type"[C] [In excellent condition].

Remarks: The original extent of the type series is not known. This is probably the holotype. *Caradrina* Poole (1989)(RWH 9654).

*Carneades messoria* var. *confracta* Smith, 1890:170.

Type locality. "One form. . . has been named var. *confracta*. by Mr. Morrison in Mr. Tepper's collection (Smith 1890)." Extracted from Todd (1982).

Female, "Agrotis Messoria var. Confracta Morr. U.S."[T]; "Euxoa slide MSU No. 8."[ty] [Type in fair condition, right antenna missing]

Remarks: The holotype (Todd, 1982). The name *confracta*, discussed by Smith (1890) was a manuscript name. The mention of a MSS name is attributed to Smith who formally published a discussion of a name which constitutes a valid description. A synonym of *Euxoa pleuritica* (RWH 10727).

*Zanclognatha minoralis* Smith, 1895:34, Plate 2, fig. 6, plate 10 figs. 28, 29.

Type locality. "Long Island, New York, probably."

Male, "*Megachyta minoralis* Smith, Type"; "6" "Lectotype, *Zanclognatha minoralis* by Todd" [Right palpus missing, otherwise in good condition]

Remarks: This specimen was found by J. E. Zabloutny in a slide box in a drawer of unsorted bees in the general collection. The lectotype of *minoralis* (RWH 8343) was designated by Todd (1982).

*Orthosia minuscula* Morrison, 1874b[1875]:147.

Type locality. "Tuckernuck Island, near Nantucket. Mr. Edward Burgess."

Female, "Tepper"[ty]; "Nantucket 46"[M]; "Type"[C] [In fair condition, antennae missing and markings somewhat rubbed]

Remarks: It appears he had but a single specimen when he described it since he indicated displeasure in the "badly rubbed" specimen and hoped that "perhaps the discovery of a better specimen will show that this species should be referred to a different genus." It is not known which, if either, is the holotype. *Oligia* (RWH 9416).

*Carneades misturata* Smith, 1890:156.

Type locality. "Colorado."

Male, "Col"[T]; "Type"[C]; "Euxoa Slide MSU No. 7"[ty] [Left meso leg missing, antennae missing]

Remarks: Todd (1982) stated that the type "in the Michigan State University collection has been selected, labeled, and is now designated the lectotype." There is no lectotype label affixed to this specimen. I have since added a label. *Euxoa* (RWH 10766) of Morrison manuscript name.

*Taeniocampa modifica* Morrison, 1874b[1875]:150-151.

Type locality. "Massachusetts. A male from my collection captured July 16, 1874.

A female from the collection of Mr. F. C. Bowditch, kindly lent me for determination."

Male, "July 14, 1874 Cambridge, Ms 414"[M]; "Type"[C] [The left antenna missing]

Male, [no labels, in very good condition]

Remarks: The labeled male is probably the holotype. The male type was obviously collected by Morrison and is likely the specimen he mentions despite the discrepancy in the date on the specimen and that of the original description. The location of the Bowditch female is not known. The status of the unlabeled male is unknown. A synonym of *Ulolonche culea* (Gn.) (RWH 10567).

*Agrotis montana* Morrison, 1875f:94-95.

Type locality. "Mountains of Colorado, above 12,000 feet, July 22 to Aug. 12.

One specimen in the possession of Dr. A. S. Packard, Jr., and another in our own collection."

Female, "Col"[T]; "*montana* Morr. Type Colorado above 12,000 ft 172"[M] [Dorsally flattened, abdomen eaten by dermestids, in extremely poor condition]

Female, "Col"[T] [In fair condition]

Remarks: Syntype. Morrison does not list the sex of the two specimens he had before him at the time of the description; the first female is probably a type. Smith (1893: 141) states that "Mr. Morrison's type is in the Tepper collection, and is from the east." Poole (1989) and Lafontaine (1987) state the type is at the MCZ. Lynette Warshaw (pers. comm. 1995) stated the type(s) are at MCZ, however, there is no information associated with this entry on the Internet at this time. The presence of the trademark Morrison label suggests that the female, labeled *montana* by Morrison is also a (syn)type and probably refers to the "in our own collection" specimen. *Euxoa* (RWH 10856).

*Eutricopsis nexilis* Morrison, 1875f:102-103.

Type locality. "Colorado, June 18."

Male, "Colorado"[M]; "Type"[C] [In good condition, antennae missing]

Remarks: Paralectotype. Hardwick (1996) designated a lectotype, now in the USNM. The locality label is one of Morrison's and is in his handwriting, but he does not indicate the specific name on the label, which is unusual for a Morrison type (RWH 11062).

*Tarache obatra* Morrison, 1875b:124

Type locality. "Louisiana."

Female, "Louisian[a]"[T]; "Type"[C] [In very good condition, antennae missing]

Remarks: The holotype. *Spragueia* (RWH 9130).

*Eustrotia obaurata* Morrison, 1874b[1875]:154.

Type locality. "Massachusetts."

Female, "*obaurata*, Morr Type. Mass 250"[M] [In fair condition, only the left meta leg complete]

Remarks: The original number of specimens in the type series is not known; probably the holotype. A synonym of *Nola pustulata* (Wlk.) (RWH 8989).

*Mamestra olivacea* Morrison, 1874b[1875]:143.

Type locality. "New York; New Hampshire."

Female, "N. Y. State"[M] [In good condition, the abdomen is broken off, and is associated with the specimen in a genitalia vial]

Remarks: This specimen was found in the general collection and not labeled as a type. Six other specimens were associated with it, all in Tepper's hand, and from western North America. The location of the material from NH is not known. If the NH material cannot be found, this is probably the holotype. Poole (1989) states type is at MSU. *Lacinipolia* (RWH 10406).

*Agrotis olivia* Morrison, 1876:238.

Type locality. "Utah (T.L. Mead)."

Male, "Utah 186"[M]; "Type"[C] [In good condition, only the right pro leg present]

Remarks: The holotype (Lafontaine, 1987). *Euxoa* (RWH 10741).

*Agrotis opipara* Morrison, 1874b[1875]:165–166.

Type locality. "The alpine region of Mt. Washington."

Female, "Mt. Washington, July 11, 1874."[ty] [In good condition]

Remarks: This specimen was found in the general collection, is unlabeled and is likely a type. Lafontaine (1987) stated that the type is in the BMNH. The MSU specimen also appears to be a syntype. A synonym of *Euxoa dissona* (Mosch.) (RWH 10706).

*Segetia orbica* Morrison, 1874g[1875]:216–217.

Type locality. "Waco, Texas."

Female, "*orbica* Morr. Type. Waco. Tex. 7 28 125"[M]; "Tepper"[ty]; "Type"[C] [In good condition, the right pro and both meso legs and the left meso leg and left antenna are missing]

Male, "19"[?] [In good condition, the antennae are missing]

Remarks: Another putative type of *orbica* is at the MCZ (L. Warshow, pers.

comm. 1995). The unsexed specimen is at the MCZ, without specific label data and is not likely a type. The male is of uncertain validity, so the female above is selected and designated as the lectotype. A synonym of *Amyna octo* (Gn.) (RWH 9070).

*Agrotis orbicularis* Smith, 1888a:460.

Type locality. "Colorado (Bruce). A single female is in Mr. Tepper's collection."

Female, "Nevada"[T]; "Type"[C]; "Euxoa slide MSU No. 14"[ty] [In very good condition]

Remarks: Despite the discrepancy in label data, Lafontaine (1987) recognized this specimen as the holotype. A synonym of *Euxoa cooki* McD. (RWH 10858).

*Heliophila oxygala* Grote, 1881a:14.

Type locality. "One specimen in Mr. Tepper's collection, one male in my own."

Female, "Col."[T]; "Type"[T] [The well marked specimen is in poor condition, the left pro leg the right antenna is missing, and glue appears to have been applied to the left wings and the right hindwing. Thorax damaged by dermestids]

Remarks: Syntype. Poole recognized types in both BMNH and MSU. Smith (1893 p. 185) states that the "type is in the British Museum. I have a specimen carefully compared with it. Another specimen, also marked type, is in the Tepper collection." The red inked labels "Col." and "Type" are in Tepper's hand. *Aletia* (RWH 10436).

*Hadena paginata* Morrison, 1875d:64-65.

Type locality. "Florida (Mr. C. J. Maynard)."

Male, "Florida"[T]; "Tepper"[ty]; "Type"[C] [In poor condition; the abdomen destroyed by dermestids]

Remarks: Probably the holotype. A synonym of *Elaphria nucicolora* (Gn.) (RWH 9676).

*Aedophron pallens* Tepper, In Smith 1883:215.

Type locality. "Southern California."

Remarks: Type presumed lost. This species was described from the Tepper collection in a paper by Smith. I have been unable to find a specimen of this species in the collection. *Nocloa* (RWH 9795).

*Agrotis pallipennis* Smith, 1888a:461-462.

Type locality. "Colorado. Specimens are with Messrs. Hulst, Graef, and Tepper."

Female, "Col."[T]; "Tepper"[ty]; "Type"[C] [In good condition]

Male, "Col"[T] [In fair condition]

Remarks: Paralectotypes. Todd (1982) mentions only one specimen at MSU and makes no mention of the male above. In addition, he stated that the female MSU specimen was in poor condition and that the abdomen appeared glued to the thorax. I have been unable to find any indication that the abdomen was glued. A lectotype of this species was designated from the U.S.N.M. (Todd 1982). *Euxoa* (RWH 10765).

*Heliophila patricia* Grote, 1880c:46.

Type locality. "Colorado. Coll. of Mr. Tepper."

Female, "Cal"[T]; "*Heliophila patricia* Grote Type"[G] [In excellent condition]

Remarks: The holotype. *Neleucania* (RWH 10610).



*Tarache patula* Morrison, 1875d:69–70.

Type locality. Texas. September 11. Expanse 15mm.”

Male, “Type”[M]; Texas, Sept. 11. 263”[M]; “Type”[C] [In good condition]

Remarks: Two female specimens from Texas were also in the type series. Both specimens have handwritten labels, apparently written by two different individuals—neither appears to be in Morrison’s hand; they are not likely types but have not been removed from the type series. The male, is selected and designated as the lectotype. A synonym of *Eublemma recta* (Gn.) (Poole, 1989); *Eumestleta recta* (Gn.) (RWH 9078).

*Mamestra passa* Morrison, 1874b[1875]:139–140.

Type locality. “California. From my collection.”

Female, “Cal”[M]; “Type”[C] [Right meso, left meso and meta legs and antennae missing]

Remarks: *Graphania* (Poole 1989), extralimital, Lower California (Baja).

*Syneda pavitensis* Morrison, 1874f[1875]:221.

Type locality. “Waco, Texas.”

Female “*pavitensis*, Morr. Type. Sept. 7 Waco. Tex. 368”[M] [In good to fair condition, the right meso leg missing, and verdigris building around the base of the pin]

Remarks: Syntype. Smith (1893: 325) states that the “type[s] are in the Museum of Comparative Zoology at Cambridge and have been correctly referred as sexes of the same species.” A duplicate type of *pavitensis* is in the Tepper collection.” No indication as to the number of specimens in the original type series. A synonym of *Bulia deducta* (Morrison) (RWH 8614).

*Heliothis pauxillus* Grote, 1873b:118, pl. 3 fig. 6.

Type locality. “Colorado Territory, (Coll. Theo. L. Mead No. 9).”

Male, “*pauxillus* Gr Type Colo July 7 300”[M] [Well marked specimen in fair condition, antennae missing, right meso and meta and left meso legs missing]

Remarks: The male is unusual is that it is a Grote name in Morrison’s handwriting. The specimen is the holotype (Hardwick, 1996). A synonym of *Schinia villosa* (Grt.) (RWH 11083). The year of publication (1875) is in error for *pauxillus* in Hodges (1983).

*Lithacodia penita* Morrison, 1875d:71.

Type locality. “New York. One female specimen received from Mr. Fred Tepper.”

Female, “Type”[C]; [Specimen in poor condition, verdigris expanding in thorax, left antenna missing]

Remarks: The holotype. This is the presumed type of *penita*, however, labels that would associate the specimen with Tepper are not present. Poole (1989) indicates the type is at MSU. A synonym of *Spartiniphaga includens* (Wik.) (RWH 9434).

*Morrisonia peracuta* Morrison, 1874c:114.

Type locality. “Doubtful, probably Texas, perhaps California. In the collection(s) of H. K. Morrison.”

Male, “Cal”[M]; “Type”[C] [The left antenna missing, otherwise the type in very good condition]

Remarks: The holotype. The locality information on this specimen is incorrect; it is an Australian species, a synonym of *Persectania ewingii* Westwood (Poole, 1989).

*Bryophila percara* Morrison, 1874g[1875]:213-214.

Type locality. "Waco Texas."

Female, "Texas"[T]; "Type"[C] [In very good condition]

3 Males, "Tex"[ty] [In good condition]

Remarks: Syntypes. It is not clear how many specimens were in the type series; there can be little doubt that the female is from the original type series, the males, however are more problematic. Each specimen is labeled with a typewritten "Tex." on white paper compared to the female which is in Tepper's hand and written in red ink. I retain the three specimens, but I suspect they were added at a later date. There are also syntypes of this species at MCZ (L. Warshaw, pers. comm. 1995). *Emarginia* (RWH 9718).

*Scotogramma perplexa* Smith, 1888a:469.

Type locality. "Colorado. The type is a unique female in the collection of Mr. Tepper."

Female, "Col"[T]; "Type"[C] [In fair condition]

Remarks: The holotype (Todd, 1982). *Lasionycta* (RWH 10352).

*Agrotis perpolita* Morrison, 1876:237.

Type locality. "Orono Maine."

Male, "Maine"[M]; "Type"[C]; "Euxoa Slide MSU No. 4"[ty] [In good condition]

Remarks: The holotype (Lafontaine, 1987). *Euxoa* (RWH 10865).

*Orthosia perpura* Morrison, 1875d:66.

Type locality. "New York"

Female, "perpura, Morr Type Colo. July 20 495"[M] [Left meso and meta and right pro and meso legs and right antenna missing]

Remarks: The holotype. A synonym of *Lasiestra impingens* (RWH 10339).

*Heliothis persimilis* Grote, 1873b:117-118, pl.3, fig. 11.

Type locality. "Colorado Territory (coll. Theo. L. Mead, No. 6)."

Female, "Colo"[M]; "Type"[C] [Type in fair condition, the right meso and meta legs, and left meso leg missing]

Remarks: The holotype (Hardwick 1996). *Schinia* (RWH 11103).

*Agrotis personata* Morrison, 1876:238-239.

Type locality. "*personata* comes only from Central Illinois."

Female, "Ohio"[M], *A. personata*, Morr. Type Ohio"[M]; "Euxoa Slide MSU No. 2"[ty] [Left hindwing missing, right forewing chipped at the apex]

Remarks: Despite the disagreement in the type locality, this is the holotype (Lafontaine 1987). A synonym of *Euxoa detersa* (Wlk.) (RWH 10838). Hodges (1983) is in error for *personata* as a Grote name.

*Agrotis plagigera* Morrison, 1874b[1875]:163.

Type locality. "Colorado. Expanse 33 mm."

Female, "Tepper"[ty] [In good condition, right antenna missing]

Remarks: This specimen was found unlabeled in the general collection. In the absence of any probable type specimens at the time of his study, Lafontaine (1987) declared the type lost. This is a likely candidate for type, despite the fact that no locality information is associated with the specimen. The original accession notes of the Tepper collection states that the type of this species was in this collection; evidently Cook did not label it as a type. *Euxoa* (RWH 10804).

*Agrotis proclivis* Smith, 1888a:453–454.

Type locality. “Arizona. One male (Tepper) and One female (Neum.).”

Male, “Arizona”[T]; “Type”[C] [In poor condition, the head, thorax and abdomen is severely damaged by dermestids and the right valve of the genitalia broken]

Remarks: Todd (1982) designated the female in the MSU as the lectotype. No such label is found on the specimen, it has since been added. *Loxagrotis* (RWH 10871).

*Mamestra promulsa* Morrison, 1875f:97.

Type locality. “Colorado (Mr. T. L. Mead), July 20.”

Female, “Col. July 219”[M]; “Type”[C] [Left pro meso, and right pro, meta legs missing, somewhat rubbed and dorsoventrally depressed]

Female, “Col”[T]; “Type”[C] [Legs absent, right antenna missing]

Remarks: Syntypes. *Lasionycta* (McCabe, 1997, pers. comm.) (RWH 10344).

*Acronycta pudorata* Morrison, 1875f:93.

Type locality. “New York; Canada. Specimens received from Messrs. Fred. Tepper and F.X. Belanger.”

Male, “[Qu]ébec Can”[M]; “*pudorata*, Morr Type”[M] [In fair condition, the right legs missing and the right forewing torn off at the apex]

Remarks: Syntype. The male, is clearly a Morrison type, and is unusual in having two of the trademark Morrison labels. No Cook (rhomboidal) type label is associated with these specimens. Smith (1893: 31) gives Tepper collection as location of the (holo)type. Poole (1989) gives the BMNH as the location of the type. A synonym of *Acronycta grisea* (Wlk.) (RWH 9212).

*Mamestra quadrannulata* Morrison, 1875c[1876]:430–431.

Type locality. “Glencoe, Dodge Co., Nebraska. From Mr. G. M. Dodge (No. 38).”

Male, “38”[?]; “Tepper”[ty]; “Type”[C]; [A well marked specimen, left valves and tegumen nearly completely destroyed]

Remarks: This specimen lacks the trademark Morrison label or any handwriting resembling Morrison’s, but matches the original description in having the number 38. This is likely a type. *Faronta* (RWH 10430).

*Hadena rasilis* Morrison, 1874b[1875]:158.

Type locality. “St. Louis. From my collection; received through the kindness of Mr. C. V. Riley, State Entomologist.”

Female, “*rasilis*, Morr Type. St Louis, Mo 34”[M] [In good condition, the abdomen missing]

Remarks: The holotype of *rasilis*. A synonym of *Elaphria grata* Hub. (RWH 9684).

*Agrotis redimicula* Morrison, 1874b[1875]:165.

Type locality. "Colorado (T. L. Mead); Albany N. Y. (J. A. Lintner):Massachusetts."

Female, "Cambridge Mass"[?]; "Type"[C]; "Euxoa Slide MSU 6."[ty] [A very well marked specimen; both antennae broken near head]

Remarks: The label "Cambridge Mass," is in an unfamiliar hand. Lafontaine (1974) designated the MSU specimen as the lectotype, but no such label is associated with this specimen; I have since added a lectotype label. *Euxoa redimicula* (RWH 10851).

*Homohadena retroversa* Morrison, 1874b[1875]:157-158.

Type locality. "Central Missouri. Prof. C. V. Riley."

Male, "Mo"[M]; "June 22, 1872"[M]; "Type"[C] [In good condition, antennae missing]

Remarks: Smith (1893) states that type is in the Tepper collection and a duplicate in the USNM. Poole (1989) states that the type is at MSU. A synonym of *H. infix*a (Wik.) (RWH 10065).

*Agrotis rileyana* Morrison, 1874b[1875]:166.

Type locality. "St. Louis, Mo."

Male, "Mo"[M]; "Missouri 188"[M]; "Type"[C] [In good condition]

Female, "Mo"[M] [In very good condition]

Remarks: Possibly the holotype; the original number of specimens is not known. *Onychagrotis* (RWH 10669).

*Oncocnemis riparia* Morrison, 1875e:213.

Type locality. "Mr. Fred Tepper has just sent me a pair of insects taken on the shore of Long Island."

Male, "L. I. Sound, July 7/75"[T] [In very good condition]

Female, "Tepper"[ty] [Meso and meta legs and antennae missing]

Remarks: Syntype(s). The types of this species were found in the general collection and probably are types. Smith (1893) stated the type was in the BM and the Tepper collection. Poole (1989) gives MSU as the type location. The lectotype should not be designated until the BMNH can be checked for types of this name (RWH 10135).

*Eutolype rolandi* Grote, 1874c:198-199.

Type locality. "Massachusetts, April 8th to 15th (Mr. Roland Thaxter, No. 1019); Missouri, April (Prof. C. V. Riley)."

Male, "April 15th 1874 Nville Mass R. Thaxter S[?]p. No. 1019" [In very good condition]

Remarks: Paralectotype. This specimen was found in the general collection and was not labeled as a type. It is clearly part of the original series, with a label that is presumably in Thaxter's hand. Poole (1994) designated a specimen in the BMNH with Grote's type label as the lectotype. This is also a paralectotype. *Psaphida* (RWH 10014).

*Mamestra rufula* Morrison, 1875d:62.

Type locality. "Massachusetts, New York, Illinois, Missouri, Indiana."



Male, "G. L. July 4/74"[T] [In poor condition, antennae and abdomen missing]

Remarks: The holotype. This type was found in the general collection. McCabe (1980) was unable to find the type in other collections. Poole (1989) indicated MSU as the location of the type. A synonym of *Spiramater lutra* (Gn.) (Poole 1989) RWH 10301.

*Mamestra rugosa* Morrison, 1875b:119.

Type locality. "Maine. From Prof. C. H. Fernald, of Orono."

Male "Maine"[M] [Abdomen partly destroyed by dermestids, the valves partly broken]

Remarks: This specimen was found in the general collection and not labeled as the lectotype. In his revision of the *Polia* complex, McCabe (1980), designated this specimen as the lectotype. However, no such label could be found on this specimen; a label has since been added. *Lacanobia* [*Trichordestra*] (RWH 10302).

*Agrotis scropulana* Morrison, 1874b[1875]:165.

Type locality. "The alpine region of Mount Washington."

Male, "Mt. Washington July 18, 1874"[ty] [In excellent condition]

Remarks: The holotype. *Xestia* (Poole, 1989) type at MSU. Probably the holotype. *Pachnobia* (RWH 10938).

*Hydroecia semiaperta* Morrison, 1874d:105.

Type locality. "Mass., New York. Not uncommon. Coll. of H. K. Morrison."

Female, "*semiaperta*, Morr. Type. Beverly, Ms 7.8.72 107"[M] [In excellent condition]

Remarks: Syntype. The location of the other specimen(s) is not known. A synonym of *Tricholita signata* (Wlk.) (RWH 10627).

*Lithophane semiusta* Grote, 1873a:34.

Type locality. "Male and female, (Mr. J. Pettit)."

Male, "Type"[C]; "*semiusta* Grote Type Eastern State 77"[M] [In good condition, the right antenna broken near base]

Female, "N. Y. State"[M] [In poor condition, abdomen missing]

Male, "N. Y. State"[M] [In excellent condition]

Remarks: The status of the male marked type by Morrison is not known. The specimens marked "N Y State" are probably not types, but could possibly be types since "Eastern State" is ambiguous. Poole (1989) states the type is in the BMNH while Smith (1893 p. 228) stated that the "type is in the BMNH and another in the Tepper collection." (RWH 9885).

*Glaea sericea* Morrison, 1874b[1875]:151.

Type locality. "Boston Mass."

Female, "Boston Ms 114"[M]; "Type"[C] [In excellent condition]

Remarks: It is not known whether types are in other institutions. Poole (1989) states that the type is in MSU. Probably the holotype. *Chaetagleaea* (RWH 9950).

*Agrotis serricornis* Smith, 1888a:458.

Type locality. "Southern California."

Male, "So Cal"[T]; "Tepper"[ty]; "Type"[C]; "Euxoa Slide MSU 10"[ty] [In

poor condition, the right hindwing partly destroyed, the right antenna missing and the valves partly destroyed]

Remarks: Todd (1982) concluded that this was the holotype by the absence of any other specimens labeled "Type." *Euxoa* (RWH 10744).

*Agrotis simplicius* Morrison, 1874b[1875]:164.

Type locality. "Texas."

Female, "Texas." [M] [The specimen is in very good condition]

Remarks: Syntype. This specimen was found in the general collection and is probably a type. Lynette Warshow (pers. comm. 1995) indicates their unsexed specimen as the holotype. It is likely that both are syntypes, and the MCZ specimen is not the holotype. Poole (1989) stated that the type is at MSU. *Euagrotis* (RWH 10907).

*Agrotis stigmata* Morrison, 1874b[1875]:163.

Type locality. "Mass. N. Y." [Morrison]

Male, "*stigmata* Morr Type, Camb. MS. June, 166" [M] [Abdomen missing, otherwise in good condition]

Male, "Mass." [M] [In fair condition, the abdomen is missing]

Remarks: The second male specimen was found in the general collection, and is also likely a type. Poole (1989) stated that the type is at MSU. There are no specimens of this name at MCZ. I hereby designate the male, marked and labeled "*stigmata*," as the lectotype. RWH (10658).

*Hadena stipata* Morrison, 1875d:64.

Type locality. "Illinois. One specimen received from Thos. E. Bean."

Female, "Illinois" [?]; "Type" [C]; Type in very poor condition, abdomen missing, thorax destroyed by dermestids, wings tattered and worn, head missing]

Remarks: Probably the holotype in the absence of other Morrison material. Poole (1989) stated the type is at MSU. *Luperina* (RWH 9393).

*Taeniocampa subterminata* Smith, 1888a:476-477.

Type locality. "Northeastern and Middle States." "It is much more common than *alia*, and I have found specimens in almost every collection I have seen."

Female, "N.Y. State" [M]; "Type" [C] [In excellent condition]

Remarks: Todd (1982) designated the MSU specimen as the lectotype and stated that it "has been selected, labeled, and is now designated . . ." I could find no lectotype label associated with the type. A lectotype label has been added to the specimen. A synonym of *Orthosia revicta* (Morr.) (RWH 10490).

*Heliothis suetus* Grote, 1873b:117, pl. 3, fig. 10.

Type locality. "Colorado Territory (coll. Theo. L. Mead, No. 7)."

Male, "*suetus* Grt. Type. Colorado 298" [M] [In good condition, the antennae missing]

Remarks: The holotype. In addition to containing another Grote name (see *californicus*), there were additional specimens included with the type but not from the type locality, since the description is based on only one specimen. The male marked with a Morrison label "*suetus*" is the only valid type in this collection (Hardwick, 1958, 1996). Hardwick (1958) recognized the male labeled in Morrison's hand and marked "*suetus*" as the only remaining type from the series. *Schinia* (RWH 11088).

*Hadena suffusca* Morrison, 1875d:61–62.

Type locality. “Mass., Conn., Colorado.”

Female, “Type”[C]; “Massachusetts 216”[M] [Well marked specimen in poor condition; the abdomen missing]

Remarks: Syntype. The description clearly shows that a number of specimens were used to describe this species. In the original description, Morrison refers to “a poor specimen. . .from Massachusetts, in the collection of the Boston Society of Natural History. . .[and] several specimens at Nahant, Mass.” The locations of the other material is not known. A synonym of *Apamea alia* (Gn.) (RWH 9351).

*Mamestra teligera* Morrison, 1874g[1875]:215–216.

Type locality. “Waco, Texas.”

Male, “Adir. N.Y.”[T]; “Tepper”[ty]; “*teligera*, Morr Type. Texas Oct 13 241”[M] [In good condition, the right antenna missing]

Female, “19/10”[?] [In poor condition, fragments of legs glued back on specimen, abdomen glued back on]

Remarks: Syntypes. I can find no explanation for the two locality labels on the type; my only guess is that a label from another specimen fell off another specimen (perhaps the female) and was inadvertently added to the type. The male is likely the type, given all the trademark features of a Morrison label, however, Lynette Warshow (pers. comm. 1995) states that syntypes of *teligera* are at MCZ. Their specimens are not the best candidates for type, however, since data cited indicate simply “Tex” with no mention of the name *teligera* associated with the specimen. A lectotype of this species should be designated, but until the MCZ material can be studied carefully, such action should not be taken. *Lasionycta* (RWH 10393).

*Oncocnemis tenuifascia* Smith, 1888b:18–19.

Type locality. “Colorado. A single female in Mr. Tepper’s Collection.”

Female, “Co.”[T]; “Tepper”[ty]; “Type”[C] [In very good condition]

Remarks: Todd (1982) recognized this specimen as the holotype (RWH 10080).

*Lithophane tepida* Grote, 1873a:27.

Type locality. “Female Examined. Mass., Mr. H. K. Morrison, No. 908.”

Female, “*tepida* Grote, Type Camb. Ms. 3/18/74 74”[M]; “Type”[C] [In excellent condition, the left antenna missing]

Remarks: The status of this type is not known. Smith (1892:229) states that “a type is in the British Museum; another in the Tepper collection.” Poole (1989) states that the type is in the BMNH (RWH 9909).

*Schinia tepperi* Morrison, 1875d:68–69.

Type locality. “Texas, September 15.” “Anterior tibia absent in the single specimen of the species before us, which is otherwise in good condition.”

Male, “15/9”[?]; “Texas”[?]; “Type”[C] [All legs missing except right meta leg, antennae missing, wings in good condition]

Female, “15/9”[?]; “Texas”[T] [In good condition]

Remarks: Syntypes. It is clear that Morrison had but a single specimen before him at the time of description, however, there were two specimens with identical data and it is not possible to distinguish which is the type. *Plagiomimicus* (Poole 1989); *Polenta* (RWH 9755).

*Agrotis tepperi* Smith, 1888a:452-453.

Type locality. "Montana. The unique female type is in Mr. Tepper's collection."

Female, "Montana"[T]; "Type"[C] [The type in very good condition, the right antenna and meso leg missing]

Remarks: Todd (1982) recognized this specimen as the holotype. *Euagrotis* (RWH 10910).

*Oncocnemis terminalis* Smith, 1888b:19-20.

Type locality. "Colorado. A single female in Mr. Tepper's Collection."

Female, "Col"[T]; "Tepper"[ty]; "Type"[C] [Left meso and meta leg missing, in very good condition]

Remarks: Todd (1982) recognized this as the holotype (RWH 10085).

*Mamestra thecata* Morrison, 1875d:59-60.

Type locality. "Glen Valley, near Mt. Washington, N. H., and Plymouth, Mass. The former specimen was received from Mr. S. H. Scudder, the latter from Mr. Edward Burgess, and was taken July 23, 1867."

Female, "thecata, Morr Type, Plymouth M[s], July 23, 1867, 118"[M] [In fair condition, left forewing with nick, right antenna missing]

Remarks: Syntype. The location of the other material is not known. A synonym of *Anhimella contrahens* (Wik.) (RWH 10530).

*Hadena tortilis* Grote, 1880c:46.

Type locality. "Washington Territory. Coll. of Mr. Tepper."

Female, "W. T."[M]; "Type"[C] [Left wings glued to thorax, right pro and meso legs missing; antennae missing]

Remarks: It is not known how many specimens were utilized in the original description. In the absence of any other Tepper material of this species, the above specimen is assumed to be the holotype. *Fishia* (RWH 9968).

*Agrotis trifasciata* Smith, 1888a:460.

Type locality. "Mt. Hood. One female specimen from Mr. Teppers Collection."

Female, "Mt. Hood"[T]; "Tepper"[ty]; "Type"[C]; "Euxoa Slide MSU No. 11"[ty] [In very good condition]

Remarks: Todd (1982) recognized the MSU specimen as the holotype. *Euxoa* (RWH 10717).

*Agrotis unica* Smith, 1890:70.

Type locality. "I have somewhere named a very distinctly marked specimen without any confusing shades *unica*." Extracted from a longer quote in Todd (1982).

Male, "N. Car."[T]; "11"; "Tepper"[ty]; "*Agrotis unicus* Type Smith"[S] [In good condition]

Remarks: The holotype. While not intended as a published name, the mention of the name is ruled a valid description (Todd 1982). A synonym of *Peridroma saucia*; (RWH 10915); number not assigned in Hodges (1983).

*Homoptera uniformis* Morrison, 1875h:148.

Type locality. "Georgia. Received from my friend, Mr. George W. Peck, of Brooklyn."



Female, "Type"[C] [In poor condition, extra pin hole verdigris, only the right pro and meso legs complete, and portions of the left fore and hindwing torn]

Remarks: Status uncertain. Unusual for a Morrison type, there is no label, only the yellow Cook type label. Smith (1893) stated the type is in the Tepper collection. A synonym of *Zale declarans* (Wlk.) (RWH 8691).

*Agrotis unimacula* Morrison, 1874b[1875]:166.

Type locality. "Atlantic States."

Female, "Buffalo, N.Y."[ty] [The antennae and right forewing partly broken]

Remarks: The specimen was found unlabeled, in the general collection. Presumably Morrison had specimens from several states at the time of description. It may be a type if no other material is found in other collections. Poole (1989) stated that the type is at MSU. A synonym of *Graphiphora haruspica* (Grt.) (RWH 10928).

*Taeniocampa vegeta* Morrison, 1875c[1876]:432–433.

Type locality. "Dallas, Texas (Boll). From the collection of H. K. Morrison."

Male, "Dallas Tex. Boll"[ty]; "Type"[C] [In excellent condition]

Remarks: The holotype. A synonym of *Cissusa spadix* (Cram.) (RWH 8592).

*Copipanolis vernalis* Morrison, 1874b[1875]:133–134.

Type locality. "Massachusetts. One specimen taken on April 8, by Mr. Roland Thaxter."

Female, "Mass"[M] [In very good condition]

Remarks: Syntype. This specimen was found unlabeled in the general collection. The status of this type is in question. In addition to this specimen, there was another male specimen collected in Massachusetts by Thaxter which matches in every way the original description of another *Eutolype* described by Grote (see *rolandi*). Poole (1994) indicated the presence of another specimen of *vernalis* at the MCZ, but was uncertain as to its validity. The MCZ specimen appears to be the better candidate. A synonym of *Psaphida rolandi* (Grote) Poole (1989, 1994); (RWH 10014).

*Hadena vulgivaga* Morrison, 1874b[1875]:144–145.

Type locality. Nebraska; New York. The two specimens before me of species are variable. The one from Nebraska, received through the kindness of Mr. G. M. Dodge, I consider the typical form."

Male, "Tepper"[ty]; "Glencoe Ne[b] 91"; "Type"[M] [In excellent condition]

Remarks: From the description it is clear that there were two specimens before him; it is not clear where the other New York specimen is. A synonym of *Oligia fractilinea* (Grt.) (RWH 9406).

*Telesilla vesca* Morrison, 1875f:103.

Type locality. "Texas; Wisconsin."

Female, "vesca, Morr. Type. Wisconsin 261"[M] [In very good condition]

Female, no labels.

Remarks: The location of the Texas specimen is not known; in the absence of a suitable candidate the Wisconsin specimen is the holotype. A synonym of *Galgula partita* Gn. (RWH 9688).

*Agrotis wilsoni* Grote, 1873c:135.

Type locality. "California."

Male, "Cal"[T] [In fair condition, antennae and pro legs missing]

Remarks: This specimen was found in the general collection and not labeled as a type. Hardwick (1970) concluded that a specimen in the BMNH was probably not a type. He believed the type to be lost; this may be the type. *Euxoa* (RWH 10867).

#### ACKNOWLEDGMENTS

This project would not have been possible without the generous support of Lyman Briggs School, and the Department of Entomology at Michigan State University. Dr. John Rawlins (CMNH), Dr. John Franclemont (Cornell University), the late Dr. Roland Fisher (MSU) and Dorothy Frye (Michigan State University Archives) provided valuable historical information and insight. Dr. Frederick Stehr, Jim Zabloutny, George Balogh, Dr. Charles Covell, Dr. Kauri Mikkola, Bob Kriegel, and Mogens Nielsen, aided this study with insight and assistance in several aspects of this study. Dr. Frederick Stehr, Jim Zabloutny and Richard Leschen reviewed part, or all of the manuscript.

#### LITERATURE CITED

- Anonymous. April, 1889. The Speculum (Michigan Agr. Col. News).
- Covell, C. V. 1970. A revision of the North American species of the genus *Scopula* Lepidoptera: Geometridae). Trans. Am. Entomol. Soc. 96:101-221.
- Edwards, H. 1881a. A new genus and some new forms of North American Zygaenidae. Papilio 1:80-81.
- Edwards, H. 1881b. New genera and species of the Family Aegeridae. Papilio. 1:179-208.
- Eichlin, T. D. and W. D. Duckworth. 1988. *Sesioidea: Sesiidae* in Dominick, R. B. et al., *The Moths of America North of Mexico*, Fasc. 5.1.
- Englehardt, G. P. 1946. The North American clear-wing moths of the Family Aegeriidae. Bull. U.S.N.M. 190:1-222, 32 plates.
- Ferguson, D. C. 1972. in Dominick, R. B. et al., *The Moths of North America North of Mexico*, Fasc. 20.2B, Bombycoidea (in part).
- Ferguson, D. 1985. *The Moths of American North of Mexico*, Fasc. 18.1 *Geometroidea: Geometridae* (in part).
- Grote, A. R. 1873a. On the Noctuidae of North America. 6th Ann. Rep. Peabody Acad. Sci. 21-38.
- Grote, A. R. 1873b. VII A Study of North American Noctuidae. Bull. Buff. Soc. Nat. Sci. 1: 95-128.
- Grote, A. R. 1873c. VIII Descriptions of Noctuidae principally from California. Bull. Buff. Soc. Nat. Sci. 1:129-155.
- Grote, A. R. 1874a. Preliminary Catalogue of the Noctuidae of California, Part II. Can. Entomol. 6:215-216.
- Grote, A. R. 1874b. Notes on American Lepidoptera with descriptions of twenty-one new species. Bull. Buff. Soc. Nat. Hist. 2:145-163.
- Grote, A. R. 1874c. New Species of North American Noctuidae. Proc. Acad. Nat. Sci. Phil. 1874:197-214.
- Grote, A. R. 1875. Preliminary list of the Noctuidae of California. Part III. Can. Entomol. 7: 25-28.
- Grote, A. R. 1880a. North American moths. Can. Entomol. 12:242-244, 254-288.
- Grote, A. R. 1880b[1879]. On *Lithophane* and new Noctuidae. Bull. U. S. Geol. Surv. Terr. 5:201-208.
- Grote, A. R. 1880c. New species of moths. Bull. Brook. Ent. Soc. 3:45-48.
- Grote, A. R. 1881a. North American moths. Can. Entomol. 13:15-17.

- Grote, A. R. 1881b. North American moths, with a preliminary catalogue of the species of *Hadena* and *Polia*. Bull. U.S. Geol. and Geogr. Surv. Terr. 6:257–277.
- Grote, A. R. 1881c. Descriptions of four new species of moths. Papilio 1:4–6.
- Hardwick, D. F. 1958. Taxonomy, life history, and habits of the elliptoid-eyed species of *Schinia* (Lepidoptera: Noctuidae), with notes on the Heliiothidinae. Can. Entomol. Supplement 6, 116 pp 194 figures.
- Hardwick, D. F. 1970. The genus *Euxoa* (Lepidoptera: Noctuidae) in North America. I. Subgenera *Orosagrotis*, *Longivesica*, *Chorizagrotis*, *Pleonectopoda*, and *Crassivesica*. Mem. Entomol. Soc. Can. 67:1–177.
- Hardwick, D. F. 1996. A Monograph to the North American Heliiothentinae. No publisher given. 281 pp, 25 plates.
- Hodges, R. W. *et al.* 1983. Check List of the Lepidoptera of American North of Mexico. E. W. Classey. London. 1–284.
- Horn, W. and I. Kahle. 1935–1937. Uber Entomologische Sammlungen Entomologen & Entomomuseologie. Entomologische Beihefte aus Berlin-Dahlem 2–4:1–536, 38 plates, 3 text figures.
- Hulst, G. D. 1881. Descriptions of some new species of Geometridae II. Bull. Brook. Entomol. Soc. 4:33–34.
- Hulst, G. D. 1886. New species and varieties of Geometridae. Entomol. Am. 1:201–208.
- Hulst, G. D. 1888. New species of Geometridae. Entomol. Am. 3:213–217.
- Lafontaine, J. D., 1974. A Synopsis of the *redimicula* group of the genus *Euxoa* Hb. (Lepidoptera: Noctuidae) with a computer analysis of genital characters. Can. Entomol. 106: 409–421.
- Lafontaine, J. D. 1987. *Noctuoidea: Noctuidae* (part) in Dominick, R. B. *et al.*, *The moths of North America North of Mexico*, fasc. 27.2.
- McCabe, T. L. 1980. A reclassification of the *Polia* Complex for North America (Lepidoptera: Noctuidae). Bull. N. Y. State Mus. No. 432. 141 pp., 210 figures.
- Morrison, H. K. 1874a. Descriptions of two new Noctuidae from the Atlantic District. Bull. Buff. Soc. Nat. Hist. 1:274–275.
- Morrison, H. K. 1874b[1875]. Descriptions of new Noctuidae. Proc. Bost. Soc. Nat. Hist., 17: 131–166.
- Morrison, H. K. 1874c. Descriptions of new Noctuidae. Bull. Buff. Soc. Nat. Sci. 2:109–117.
- Morrison, H. K. 1874d. On two new species of Noctuidae. Can. Entomol. 6:105–106.
- Morrison, H. K. 1874e. On the species of *Calocampa*. Bull. Buff. Soc. Nat. Sci. 2:190–192.
- Morrison, H. K. 1874f. New North American Lepidoptera. Proc. Bost. Soc. Nat. Hist. 17:194–203.
- Morrison, H. K. 1874g[1875]. List of a collection of Texan Noctuidae, with descriptions of new species. Proc. Bost. Soc. Nat. Hist. 17:209–221.
- Morrison, H. K. 1875a. Descriptions of a new North American species of *Mamestra* and of a genus allied to *Homohadena*. Can. Entomol. 7:90–91.
- Morrison, H. K. 1875b. Notes on the Noctuidae. Proc. Bost. Soc. Nat. Hist. 18:114–126.
- Morrison, H. K. 1875c. Notes on the Noctuidae, with descriptions of certain new species. No. II. Proc. Acad. Nat. Sci. Phil. 1875:428–436. Issued 1876.
- Morrison, H. K. 1875d. Notes on the Noctuidae, with descriptions of certain new species. Proc. Acad. Nat. Sci. Phil. 1875:55–71.
- Morrison, H. K. 1875e. Notes on an interesting eastern variety of *Oncocnemis chandleri*. Can. Entomol. 11:213–214.
- Morrison, H. K. 1875f. Notes on North American Lepidoptera. Ann. Lyc. Nat. Hist. N. Y. 11: 91–104.
- Morrison, H. K. 1875g. Descriptions and notes on the Noctuidae. Can. Entomol. 7:214–216.
- Morrison, H. K. 1875h. On two new species of Homoptera. Can. Entomol. 7:148–149.

- Morrison, H. K. 1876. Descriptions of new North American Noctuidae. Proc. Bost. Soc. Nat. Hist. 18:237-241.
- Poole, R. W. 1989. *Lepidopterorum Catalogus*. New Series, Fasc. 118, xii 1-1314.
- Poole, R. W. 1994. *Noctuoidea, Noctuidae* part) in Dominick, R. B. et al., *The Moths of America North of Mexico*, fasc. 26.1.
- Rindge, F. H. 1954. Revision of the Genus *Tornos* Morrison (Lepidoptera:Geometridae). Bull. A. M. N. H. 104:181-236.
- Rindge, F. H. 1955. The type material in the J. B. Smith and G. D. Hulst collections of Lepidoptera in the American Museum of Natural History. Bull. A. M. N. H. 110:95-172.
- Rindge, F. H. 1958. Descriptions of and Notes on North American Geometridae (Lepidoptera), No. 3. Am. Mus. Novitates 1910:1-24.
- Rindge, F. H. 1970. A revision of the moth genera *Hulstina* and *Pterotaeta* (Lepidoptera, Geometridae). Bull. A. M. N. H. 142:255-342, 111 figures.
- Rindge, F. H. 1973. On *Glenoides texanaria* (Geometridae) with designation of the lectotype. J. Lep. Soc. 27:140.
- Rindge, F. H. 1975. A revision of the New World Bistonini (Lepidoptera: Geometridae). Bull. A. M. N. H. 156:69-156, 110 figures.
- Smith, J. B. 1883. Synopsis of the North American Heliothinae. Trans. Am. Entomol. Soc., 10:205-256, 2 plates.
- Smith, J. B. 1888a. New genera and new species of North American Noctuidae. Proc. U.S.N.M., 10:450-479.
- Smith, J. B. 1888b. New species of *Oncocnemis*. Ins. Life. 1:18-20.
- Smith, J. B. 1890. Contributions toward a monograph of the insects of the Lepidopterous family Noctuidae of temperate North America-Revision of the species of the genus *Agrotis*. Bull. U.S.N.M. 38:1-237.
- Smith, J. B. 1893. Catalogue of the Lepidopterous superfamily Noctuidae found in Boreal America. Bull. U.S.N.M. 44:1-424.
- Smith, J. B. 1895. Contribution toward a Monograph of the insects of the Lepidopterous Family Noctuidae of Boreal North America. A revision of the deltoid moths. Bull. U.S.N.M. 48:1-129, 14 plates.
- Tepper, F. 1881. Descriptions of New Lepidoptera. Bull. Brook. Entomol. Soc. 4:1-2, 1 plate.
- Tepper, F. 1883. Description of new moths. Bull. Brook. Entomol. Soc. 5:65-67.
- Todd, E. L. 1982. The noctuid type material of John B. Smith (Lepidoptera). U. S. Dept. Agr. Tech. Bull. 1645: 228 pp.

Received 7 February 1997; accepted 21 June 1997.

#### ADDENDA

Dr. Tim McCabe had the opportunity to study the types after receiving the galleys, and suggests that both *Mamestra teligra* and *Glaea sericea* are names presently misapplied to other species.